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## REVIEWS OF NEW BOOKS.

*A Steam-Voyage to Constantinople, by the Rhine and the Danube, in 1840, 41, and to Spain, &c. in 1839. By C. W. Vane, Marquis of Londonderry, G.C.B., &c. To which is annexed, the Author's Correspondence with Prince Metternich, Lords Ponsonby, Palmerston, &c. 2 vols. 8vo. H. Colburn.*

THERE is much to like, and something to provoke discussion, in the writings of the Marquis of Londonderry. He speaks straight on, and does not disguise either his first impressions or more confirmed opinions. His high Tory politics shine out when statesmen or measures come under his notice; and on all other subjects there is a hearty openness of sentiment, which may beget contradiction to the argument, but cannot fail to impress a respect for the honest sincerity of the man. A similar compliment is due to his style,—we do not mean his composition, which is rather of the too easy epistolary, and wanting in a little polish, but rather his manner of treating the objects presented to his observation, which is the very reverse of book-making, and consequently the more especially entitled to our confidence and commendation. For, whenever we meet with laboured poetical descriptions, and what Braham used to call *loopy oozy* (meaning thereby enthusiasm), we are apt to fancy that if not the imagination, at least the language, of the writers is running wild away with them; and that in proportion as the words are grandiloquent and sexquipedalian, and the thoughts are *magnifique* and climacteric, the facts are few, and the pictures unreal. This may be exemplified by Lord Londonderry's *début* at Constantinople.

"I come now (he says) to a difficult part of my narrative, when I endeavour to describe the entrance into the Bosphorus, and all the feelings which arose in my mind as I stood on the deck of the steamer, watching its passage up to its moorings before Constantinople. There is no one who has read the romantic and brilliantly elaborated descriptions of Gibbon, Anastasius Hope, La Martine, &c., down to the glowing details of Miss Pardoe, with her *City of the East*, as well as of other modern writers, especially the able compiler of the recent *Hand-Book for Travellers*, and, above all, the immortal Byron, who can avoid having his imagination excited and worked up in trembling expectation as to the beauty, splendour, and magnificence of the scene, so as to look for and expect a terrestrial paradise. All these descriptions, doubtless, immortalise 'the light caïque,' as much as Shakespeare does 'the cloud-capt towers, the gorgeous palaces, the solemn temples,' &c.; yet, under the influence of all this imagery and previous preparation, I never experienced more disappointment than in my first coup d'œil of the Ottoman capital. When you expect much, it is seldom realised; and I bitterly felt this truth, and was bold enough to come at once to the conclusion that what I had read or heard was overcharged. The most eminent of the writers mentioned, I think, could never have seen the spot; and in some instances the prejudices of long intimacy, or of poetical exaggeration, had probably operated;

the rest seem but agreeable delusions, intended for simple firesides at home, and written by individuals who, having by great efforts accomplished the feat of arriving at Constantinople, had seen little beyond it and their own homes. The entrance of the Tagus, the Bay of Naples, the splendid approach to the grand quays of Petersburg, the Kremlin, and view of Moscow, all struck me as far preferable to the scene at the entrance of the Bosphorus."

And *encore* at his exit, but told by his accomplished lady:

"As the loveliness of Constantinople (*bien entendu* at a distance) is undisputed and unrivalled, when

'Skies are blue, and earth is gay,'

so does it become absolutely hideous, when the summer colouring has passed away, and winter brings a change over the scene. Miss Pardoe may talk of its ermine mantle; but with a deep covering of snow, the Bosphorus boiling and smoking, and the Black Sea coming down, any thing more desolate and uninviting than the aspect of Constantinople cannot well be imagined, while the misery and barbarism of its interior defy description. The want of pavement; the sloping, pent roofs, which pour deluges of rain over the unwary passenger, who, in fishermen's boots, may be attempting to thread his way through hills of snow and ice, falling over dozens of wretched, houseless curs, that are lying curled up at every step, and hardly able to keep his footing up and down the rugged ascents and descents; the miserable habitations, precluding all possibility of comfort, wretched wooden buildings, that afford no protection from noise and cold, and the difficulty of moving about,—render Constantinople a most undesirable abode." I have already remarked on the dogs which are peculiar to this place; none are suffered to enter the houses, and all are without owners; yet the streets are filled with thousands that howl all night, and attack any one not provided with a stick; they exist on charity, have their own police-arrangements and districts, and will not suffer an intruder. They are ugly, rough, reddish beasts,—half wolf, quarter jackal, and quarter dog; and this tribe add considerably to the *désagrémens* of Constantinople.\*

\* Lord Londonderry says elsewhere:—"The living, or rather the materials, which form the gourmand's larder at Paris, London, and Vienna, are all bad at Constantinople, or, at best, indifferent. Meat of all sorts inferior; only young white beef, poor mutton, no veal or pork. Fowls, half-fed, hard, and bad tasted. Butter, none to be had, nor tolerable milk, and this mostly from goats. Bread, from there being no yeast from breweries or distilleries, is universally sour and nasty. There is no wine but what is imported: and as great profit is made upon it, it is every where bad. The water at Pera is also brought from tanks, and, unless filtered, is most disagreeable. The vegetable and fruit-market may be good in their season, and the fish in the Bosphorus is of various kinds and excellent; the sword-fish is particularly esteemed. A certain fish, with a black streak down its back, is curious; but I did not think it good. Small gudgeons, mullet (red and grey), white-bait, and lobsters, all capital. There is game, especially woodcocks and hares; but, except this one luxury of the table, this vast city is so unprovided, that the great houses are actually obliged to import from other places every article of excellence, or that is usually found furnishing good tables elsewhere. The pleasures of exercise are reduced to pedestrian perambulation on an infamous

With us the proverb runs, "every dog has his day;" but in the City of the Sultan, it seems, all the dogs have their night! But we have got by some chance in *medias res*, instead of steaming up the Rhine and down the Danube with our noble travellers. We trust, however, to be excused from regularly pursuing this fluvial voyage; for, in truth, the Rhine has become a perfect Strand, and the Danube is now a very little more unknown than White-chapel on the route to Blackwall, instead of the Black Sea. A few notes *en passant* will suffice for this portion of the tour. At Nuremberg the noble Marquis was affronted by a strange piece of etiquette from paying his respects to the King of Bavaria, then at a camp of exercise near Furch: his lordship had unluckily sent his uniform on to Munich, and could not be received either in plain clothes, nor, we presume, without. Lord Combermere was refused on the same ground, with all the "*considération la plus distinguée*" of the A. D. C. Comte Paumgarten, on whom devolved the (we should think) disagreeable office of intimating this royal absurdity, in answer to a wish so respectful and complimentary. But worse remained for the author when he came to Constantinople; of which anon, as we have to observe before that Vienna has greatly improved in the last twenty-five years, since the Marquis was our ambassador to the Austrian court. Here he renewed his friendly intercourse with Prince Metternich, of whose political qualities he speaks in very strong terms as preserving the peace of Europe; and whose portrait adorns the first volume, as that of the Sultan does the second. The accounts of the British representatives, both at Vienna and Constantinople, are by no means rose-coloured.

"Our first days at Vienna (says the Marquis) were occupied in dinners of ceremony at Lord Beauvale's, the Russian Ambassador's (Count Tatishcheff), and Prince Metternich's. In the order we received the invitations I shall note them. Our minister's repast assembled only a small party, and was apparently offered as a convenience to us on the day of our arrival. His *attachés* were present. He himself lived on a second floor in a fine house, the lower part of it, I understood, not furnished. Lord B. sees few people, and seldom gives any grand or general reception, his indifferent health being the reason for living privately: his amiable qualities and facility, however, his long residence at Vienna, and his friendship for Prince Metternich, make up for all omissions. I think an ambassador of England, at an imperial court, with 11,000l. per annum, should not live as a private gentleman, nor consult solely his own ease, unmindful of the greatness of the sovereign he represents. A habit has stolen in amongst them of adopting a spare *ménage*, to augment private fortune when recalled. This

pari, or riding the streets on the horses that offer. There are no riding-schools, tennis-courts, or other manly exercises of any kind. How, then, is the life of man, accustomed to European tastes, to be passed, or rather spun out, at Constantinople? He must sink into the indolence and *insouciance* of the Turks; turn to the fumes of tobacco, to sherbet, and coffee; and be satisfied without the harem, which seems the natural prerogative of the Mussulman."

is wrong; and, when France and Russia, and even Prussia, entertain constantly and very handsomely, our embassies and legations, generally speaking, are nigardly and shut up. At Count Tatischev's our reception was of a different description—perfection in *cuisine*, wine, and attendance; sumptuousness in liveries and wax light; and the company, about thirty, the *élite* of Vienna. All the Russians in the town were of the party: Madame Narichkin, Madame Razumowski, Prince and Princess Kourakin, Count Woronzow, besides the Austrian ministers, and the diplomatic corps. \* \* \* Prince Metternich's was our third dinner; he was residing at his garden, two miles out of the city. He had made great additions to this delightful summer-house, which it was when I saw it last, in 1822, and had added three *corps de logis*—one for his children, another for his wife and himself, and a third, as a *pavillon* for company. The last was really a fairy edifice, and so contrived with splendid reflecting mirrors as to give the idea of being transparent. It was ornamented with rare malachite, porphyry, jasper, and other vases, presents from the various sovereigns of Europe, &c. Besides these, there were many statues of marble, and casts of the most celebrated works in Italy. We were above thirty at dinner. The wines are the most *recherché* part of Metternich's table. The far-famed Johannisberg is presented in the greatest perfection. But I cannot state (as did Lady M. W. Montagu) that I counted eighteen different sorts of wine, or that a list of their names was on my plate: if such a practice ever existed, it is long since it was used. Some account of the prince's present appearance and health, the more striking as I had not seen him since the congress of Verona, in 1823, may be generally interesting. His reception of me was kind and very courteous, though, perhaps, less warm than formerly, or than I expected to receive; but age blunts the effervescence of early sentiments. The formal embrace on both cheeks was given in a more stately manner—the smile was more languid—and the eye less illumined. His person is more slight than formerly, his hair is of a more silvery hue, the features of his expressive face are more marked; the erect posture was still maintained, but the gait had become more solemn; and when he rose from his chair, he had no longer his wonted elasticity. Such are the ravages of time on the frame in twenty years; but in the prince's conversation I found the same talent, the unrivalled *esprit*: the fluency and elocution, so entirely his own, were as graceful, and the memory as perfect, as at any former period. \* \* \* In no state is the horror of change so remarkable as in Austria; she marches not with the times we live in; she partakes not of the irresistible movements that agitate other nations; but keeps on her wonted way, and, like the great Danube, which rolls through the centre of her dominions, the course of her ministry and of its tributary branches continues without any deviation from its accustomed channel. The present emperor is known to be unable to grapple with his vast position. The two leading ministers, in whose hands all power is vested, are Metternich and Kollowrath, the minister of the interior. The mind of the emperor Francis was firm and decided, and there never was a sovereign more truly the father of his people. He had also acute judgment and intellect to conceive and determine, and there was less difficulty with him in carrying measures into effect. But the misfortune now is, that there is no directing head; and, when the two all-powerful

statesmen differ, measures are in abeyance. It can easily be imagined, in the concerns of such a monarchy, how much this state of affairs must weaken and paralyse the government. Kollowrath and Metternich are known to be of opposite principles and measures; and while the latter is the statesman most looked up to by his country and Europe at large, the former is a politician of the old school, has the highest reputation for abilities, and commands, by his *portefeuille* of the interior, all the resources of the kingdom. With all these drawbacks, existing more or less for half a century past, Austria has nevertheless stood prominently forward on the political arena of the world, as the great fulcrum of all social and conservative order, and has mainly contributed to preserve the peace which has been so long enjoyed in Europe. Such, I am persuaded, will still be the case, owing to her geographical position, native firmness of character, and horror of changes, as I have described it, abroad as well as at home, since the one reacts on the other; but Austria, it must be recollected, has large, widely separated, and, to this day, ill-reconciled possessions; so that commotion is dangerous, and quietude her real strength. This, I am persuaded, is the *mot d'énigme*, though the cause may appear enigmatical."

One or two dicta of Prince Metternich deserve to be added:—

"The accounts had just arrived of Beyrout. He said, 'C'était un commencement—peu de chose. Il faut voir actuellement ce que le montagne fera.' I alluded generally to the apparently happy change of system in our foreign policy. Metternich replied, that in life 'he had always observed and acted upon the plan of adopting the best proceeding and determination on all important subjects; that to his point of view thus laid down he had steadfastly adhered; and that, in the indissoluble workings of time and circumstances, it had ever occurred to him that matters were brought round to the very same spot from which, owing to the folly and misguided notions of inexperienced men, they had for a time taken their departure.' This was evidently an allusion to England's having departed from the intimate alliances and principles of the treaties of Vienna and Paris."

The Prince's opinion of our late ministry, of the Spanish war, of the Duke of Sussex's letter to Espartero, and other like matters, we leave to political critics; and finish our Viennese matters with the tragical-comical history of a great politician in love, as related to the Marquis on good authority. Surely all the world's a stage; but with the famous Chevalier Von Genz the stage became all the world.

"Is it not passing strange (says the Marquis) that this profound genius, this subtle politician, this phoenix of literature and composition, should have died actually from an overwhelming excess of the passion of love?—and this, too, at an age when nature cools down the passions and bids them subside; for he was near fourscore; yet so the case stands. He imbibed a maddening attachment for Fanny Ellsler, the Vienna *dansuse*, then more partially known, but of late conspicuous both in England and America. Her early charms and fascinations turned the philosopher's brain. His habits of business wholly ceased; and, on Prince Metternich's observing and reasoning with him upon this change, Genz assigned, as his formal excuse, 'that he had been so thunder-struck with the result of the days of July, that from that moment he had given up Europe for lost, and was convinced that no effort could save

the world from anarchy and confusion, and therefore he ceased to occupy himself with state affairs.' Metternich argued with him, 'that in proportion as greater dangers arose, so ought men of capacity to rise more energetically to the combat.' But Genz then more candidly avowed, 'that he had abandoned himself entirely to one engrossing feeling; he proclaimed it, he gloried in it; he was fondly, passionately, desperately, eternally in love, and had only that existence and that deity.' On this opera-girl poor Genz lavished large sums of money, and, whilst exhibiting his partiality, contracted debts, and ultimately died in penury and wretchedness. It is due, however, to this enchanting creature, Fanny Ellsler, to say that she behaved very kindly to him, and seemed vain at having subdued and attached a person of such high and undoubted genius. Prince Metternich related also that he was with his friend a few hours before he breathed his last; and that this individual, who was proverbially known to be so timorous, that he dreaded his own shadow, nevertheless, by the force of the one predominant feeling, died with the greatest calmness and courage, declaring he embraced death as a relief from the devouring passion that consumed him. He thus departed, at the ripe age of fourscore, a victim to the affections."

Affections, indeed, my lord,—he was "daft!" What a *pas de deux*, eighty and eighteen, the ancient privy-counsellor and the whirling *dansuse*! The mere sight turned his brain. But it is added, he "left behind him some beautiful sentimental letters in manuscript, addressed to his fair dulcinea, breathing feelings stronger, perhaps, than ever were penned before." The Marquis could not obtain copies; at which we rejoice; for as there is no fool like an old fool, we are glad that the melancholy spectacle is not likely to be farther exhibited in the once highly gifted Von Genz, who played so eminent a part in the allied congresses and councils when his intellectual powers were in their prime. With regard to the drama itself, Lord L. tells us,—

"I found the theatres in Vienna much fallen off, the Bourgeois alone excepted. The charming *ballets d'enfants*, which produced the Meyers, the Heberles, and the Ellslers, had been put a stop to by the emperor Francis, before his death, on the ground of immorality. There may be wisdom and virtue in the decision, but still the loss in amusement and pleasure is extreme."

Well, let us balance the wisdom and virtue against the amusement and pleasure, and approve of the change. The Princess Metternich has adopted a custom which we should like to see followed in London, for the sake of encouraging the arts:—

"She has established a rule of asking every distinguished stranger who visits her for his portrait, to be painted by one or other of the eminent artists who inhabit Vienna: of these, M. Draffin is the favourite. No one, of course, can or ought to refuse so flattering a request from a beautiful woman; and the princess has now on her table three large folio books, containing portraits of the most renowned or interesting characters in Europe who have passed through Vienna since her marriage, all painted in beautiful miniature, and presenting the most striking likenesses."

We must now jump, however, to the Turkish capital and the Ponsonby correspondence, which is delectably introduced by the two following epistles. They are thus prefaced by the Marquis:—"After being settled in a tolerably good house, I took measures, on the 6th instant, to

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deliver all my letters, pay visits, and send to our ambassador, Lord Ponsonby, desiring to be presented to the court, and obtain the usual firman to see all the mosques, &c." It begins on Guy-Paux day.

*The Marquis to the Viscount.*

"Pera, Nov. 5, 1840.

"Dear Lord Ponsonby,—I regret I have had no means as yet of paying my respects at Therapia; but as yet you have not the blessings of railways or omnibuses. I am desirous of a presentation to the Sultan, and to have a firman to see the great lions of this strange new world. Will you be so good as to assist me in these objects? Lady Londonderry is equally desirous of seeing the harem, if it can be accomplished. I remain, dear Lord Ponsonby, yours very truly and faithfully, VANE LONDONDERRY."

*The Viscount to the Marquis.*

"Therapia, 6th November, 1840.

"Dear Lord Londonderry,—I cannot present any body to the Sultan without exposing myself to perpetual inconvenience of having to present every body, and to make a journey of twenty miles every day, and spend my whole time in attendance upon visitors to this place. This is the plain truth, and I tell you frankly. Nobody sees the harem, that I know of; and it is not a thing fit for me to ask. You can easily get a firman by paying for it, to see the mosques, &c. It costs me 40l. to go to see them, and I am not rich enough for such expenses. Thus, you see, I am as useless as need be in what you want of me. Nevertheless, I should like to be useful; but I should like better to persuade you of the facts I have stated above. We shall be very glad to see you when you like to come this way. I am too constantly occupied to have a moment for even taking the air, much less for so long a journey as from hence to Pera; and I am afraid I shall not get my liberty for some days to come. I remain, my dear Lord Londonderry, yours faithfully, PONSONBY."

The ensuing correspondence is too long for us; but it is a singular tissue, and well worth reading. The "my dear lords" instantly sink into the distant "my lords;" and finally, the Marquis appeals to the secretary for foreign affairs, Lord Palmerston, who, in answer, writes to tell him that Lord Ponsonby's explanations are "entirely satisfactory and sufficient."

Respecting Constantinople these volumes give us little new information; though both Lord and Lady Londonderry had audiences of the Turkish ministers and of their royal master, chiefly through the friendly intervention of the Austrian ambassador Baron Sturner, and their own rank and station. Of the Sultan Lord L. relates—

"I now expected, from notions of oriental grandeur, great pomp and state, surrounding ministers and guards, &c.; but my surprise may be imagined when, on entering a common French-carpeted room, I perceived, on a little ordinary French sofa, under the window from which his majesty had seen our advance, the sovereign of this great empire sitting cross-legged, without a single individual near to him but those who preceded our approach. Two small sofas, half-a-dozen French chairs, and several wax lights, were all the ornaments of this very plain *salon*. The Sultan was covered with a very full cloth mantle, of a dark blue, or probably green colour, clasped at the collar by a superb aigrette of diamonds. Under the mantle, and on the chest, he wore a very brilliant and sparkling order of the crescent, which was also in diamonds; but surpassing all in matchless size and beauty was the sword which his majesty held in his hand. On his head was the

usual unbecoming common caftan or fez, which sat so ill upon him that he could scarcely keep his hand from arranging and pushing it back and forward every moment. This was the whole extent of the state exhibited by Abdul Melhid. As to his person, he is a tall, sallow youth of nineteen or twenty, with a long visage, but possessing fine eyes and eyebrows, so that, when his face is lighted up, it is agreeable and spiritual. He has a facility in conversing, a pleasing voice, and an action with his right hand while speaking, which is peculiar and characteristic."

From Lady Londonderry's visit, in company with Admiral Walker's lady, we copy the following:—

"At last Reschid Pasha, the *Maréchal du Palais*, &c., returned, having put on their diamond decorations, and, after waiting again some time,—for nothing in Turkey is ever done in a hurry,—we were requested to follow them. I expected to enter some adjoining room in which the Sultan would be; but, to my surprise, I was desired to put on my furs, my clogs, and my cloak, and we followed the attendants down stairs, crossed an open court, and arrived at a long terrace, or garden, at the end of which was the palace. Luckily it had ceased snowing, but the cold was intense: I was then informed that the great officers of the palace had received orders to shew us the apartments, and we were first conducted into a *kiok*, or pleasure-house, of great beauty. The courts of the palace were paved with marble, and a great room, 150 feet long, with a large bow in the centre, the whole covered with the finest matting, fitted up in the oriental taste, with a long line of lattices to the water, must be a delicious resting-place during the summer heats. While I was shivering with cold, and gazing on the Asiatic coast, and the lovely view which even in that bleak and dreary month lay before me, a large square trap-door in the floor was raised, and I heard a voice say, '*Viola la mer, madame!*' Scarcely believing my ears, I advanced, and *effectivement* the deep green sea flowed under the splendid eastern gallery. A shudder came over me as I thought how readily that trap-door could close over any of its victims, and my blood ran cold as my imagination made the mute inquiry, who can tell on whom that barrier has shut for ever? I recalled these lines—

'When weary of these fleeting charms and me,  
Here yawns the sack, and yonder rolls the sea:'

and I turned away, and gladly obeyed the summons to proceed. Such is the influence that the country one is in has over one's thoughts. In England I should have thought only of the delicious coolness of this invention during summer: in Turkey the mind wanders over fields of romance and of imaginary horror. Following the officers of the court, we crossed another flight of steps to the palace. The hall and stairs were matted, and lined with attendants in fez and caftan. We were then ushered through long suites of apartments, expecting every moment to enter the presence of the Sultan; and, at length, on being shewn into a small side ante-room, where I was the least prepared for the meeting, he walked quietly in and suddenly stood before us. The usual fez was on his head, a large military cloak hung round him, clasped at the throat with a magnificent *agrafe* of enormous diamonds; a large solitaire was on his little finger. He is tall, pale, sallow, and slight, with fine eyes, a sweet smile, and amiable expression of countenance. He is only eighteen years of age. It is said he is learning French, and is much more *au fait de tout ce qui se passe* than is generally ima-

gined. The Prince de Joinville, when here, saw and conversed much with him; and, lately, a good deal has transpired as to his manner and ideas from a Russian painter, who has just finished his picture, and with whom he had much conversation during his several sittings. He did not bow, but immediately began talking to Reschid Pasha, who, having paid his homage, which is done by gracefully *faisant semblant* to pick up the dust from the feet, according to the expression, '*Je baise la poussière*,' interpreted to me the Sultan's words. He expressed his pleasure and satisfaction at seeing me, and his hope that I had recovered from the fatigue of my journey; to this I replied. He then inquired if I had been at all rewarded for what I had suffered, and for the deprivation of the comforts and luxuries of England. I then requested Reschid Pasha to express my admiration of Constantinople, my gratification at my visit and reception, and my gratitude at having been allowed to see every thing that was curious and interesting. The Sultan inquired if I had visited the *Tache ragan* Palace, and on my answering in the negative, he desired orders might be given for it to be shewn to me. He then inquired who the lady was who accompanied me; and on being told her name, he desired Reschid Pasha to express the pleasure he felt at having an opportunity of telling her how highly he valued her husband's services. After a happily-worded reply from her, to the effect that she had equal delight in being able to assure his majesty that he had not now a more faithful servant than Admiral Walker, the Sultan expressed his regret at my intention of leaving Constantinople so soon, and then suddenly vanished."

Before quitting Constantinople, we would ask if it be not a misprint at page 303, where a plane-tree is mentioned as being 105 yards round?\*

From Turkey the travellers visited Corfu, Malta, Athens, and other parts of Greece; and thence proceeded to Sicily and Naples. At Naples they heard of the unfortunate destruction of Wynyard by fire, which naturally put a hurried end to travelling and tour-writing, which occupies ninety pages of the second volume. The rest is filled up with a revised and interesting account of the tour in the southern parts of Spain, &c. three years ago, to which we have only to refer. On the whole, many things worthy of attention, from the high position and access to intelligence enjoyed by the noble writer, and denied to humbler hands, will be found in these volumes, which, without joining ourselves to any question of policy or partisanship, we are bound to say, in other respects reflect credit on the character of the author, as a British peer, a gallant officer, and an observant traveller.

*The History of Europe.* By Archibald Alison, F.R.S.E. Vol. X. Blackwoods.

THE tenth volume of this work opens with the stirring events of the year 1813. The grand spectacle was then presented to the world of all Europe rising with simultaneous accord to react upon and drive back a revolution, which,

\* At page 57, vol. ii. *ciceroni* for *cicerone* is also, we suppose, a typographic error: but we only notice these blemishes on account of the number which occur throughout the volumes. In the Ponsonby correspondence alone, between pages 187 and 198, there are no fewer than three years' dates, 1840, 41, and 42 (yet to come!), given to letters which were written within five days in the same month! In cases where there can be any doubt, how fatal to intelligibility would such inaccuracies be!



assuming the guise of military ambition and conquest, had extended its iron rule over the Continent for the space of thirteen years. This outbreak had been preparing from the date of the first reverses of the French in the Russian campaign. Then might have been heard on the European Continent the sound of stirring beneath, and cracks here and there multiplying on its surface, like some great ice-chained flood just before its waters are freed; till at last the torrents broke loose and rushed together in resistless course. Never since the time of the crusades had there been seen such a sudden uprising of nations as took place at this crisis;—not then barbarians, not a wild force, but civilised people, disciplined armies, stood forth to champion a common cause.

It certainly need be no matter of boast that Napoleon was conquered, that France was subdued, by the immensely out-numbering forces the allies brought against them; but the very fact of the consentaneousness of all Europe—people as well as cabinets—to cast off the yoke of the French emperor, shews how galling and oppressive that yoke was. Indeed, that one potentate should lord it, or have virtual supremacy, over foreign nations, was in itself intolerable; and would have been hardly less so, though this supremacy had been as beneficial as it was baneful. But there was a principle involved in the contest of greater importance than even that of international independence:—this principle, which Mr. Alison brings prominently forward throughout the whole of his history, is that of an overruling Providence.

An antichristian revolution had found its fullest expression, all its concrete might, in the military rule of the great Corsican. Self-will was the principle of that revolution, and it pleased the Almighty to permit it an ample scope of action. Springing out of a complete enfranchisement from Christianity, ascribing in the most emphatic sense power to man, it certainly gave, for a season, a wonderful energy of daring to the French. They effected prodigies, and Europe looked on astonished and dismayed. Was, then, this revolution, attended with such surprising successes, destined to triumph? The self-will principle of irreligion was, the result has shewn us, to be manifested in its full strength, that its nature and effects might fully appear; and it was to fall less before the antagonist principle than before its own inherent wilfulness and insatiable ambition. Out of itself was to come forth its own destruction, and this after the most natural manner; for the energy of self-will consisting only in action, continual action was necessary to the French during its reign. Napoleon always insisted, as Mr. Alison several times observes, that "constant conquest was essential to the very existence of his empire." But this extreme tension of excitement, this overwrought activity, this perpetual advance from enterprise to enterprise, from aggression to aggression,—these ever-fresh demands for new efforts and new sacrifices, of ever-increasing magnitude and urgency, inevitably grew speedily beyond the utmost stretch of the resources of the nation, and of the genius of the wonderful man who ruled her destinies. And thus it happened that the revolution fell mainly before itself—before its own principle of all-absorbing self-will, to which every other consideration was made to submit.

The contrast which the resistance of England presented to the aggressions of France is the other lesson to be derived from this mighty contest. Here was seen the free Christian

people arrayed against the infidel revolution-ary people. The two principles, Christian and Antichristian, were in their highest degree represented by these two people. The other nations of Europe only partially, or in a very corrupt form, upheld the religion of the Gospel, and civil freedom was utterly unknown to them; they were therefore weak, and for a season the destined prey of France. But England was never worsted throughout the long struggle, and preserved constantly a vantage-ground. By her steady, persevering, and successful efforts to make and to maintain head against the new power, she kept up the heart of the prostrated nations, even in the hour of their prostration: this was her high honour. Though at one most critical juncture she stood alone, she never flinched nor wavered.

But we must turn to the exciting spectacle Mr. Alison sets before us. All Europe is in motion. The wreck of the five hundred thousand French, who a few months before had been elate with victory on the banks of the Niemen, had recrossed the Rhine, presenting at most a force eighty thousand strong. "The vast and splendid fabric of the French empire had disappeared like a dream; its external influence, its foreign alliances, had vanished; and the liberated nations of Europe, amidst shouts of triumph and songs of gratulation, were crowding in arms to overwhelm its remains."

At length the confederacy, which Pitt had ever aimed at bringing about, had taken place. "From the rock of Gibraltar to the shores of Archangel, from the banks of the Scheldt to the margin of the Bosphorus,—all Europe was now arrayed in one vast league against France."

After the battle of Leipsic the whole population of the Rhenish confederation welcomed the allied troops as deliverers; and a convention was forthwith entered into for the organisation of the whole forces of Germany against the common enemy. The troops thus raised, independent of the forces of Bavaria, which were thirty-five thousand strong, amounted to upwards of a hundred thousand. Besides this and the landwehr, or militia, which were called out and armed in all the German states, the allies had three great armies on foot: the first, under Prince Schwartzburg, numbered two hundred and sixty thousand combatants, and might be expected to bring two hundred thousand sabres and bayonets into the field; the second army, called the army of Silesia, was under the orders of the renowned Blücher, and was one hundred and thirty-seven thousand strong; the third army, commanded by Bernadotte, prince royal of Sweden, mustered in all one hundred and seventy-four thousand men, of whom one hundred and twenty thousand might be relied on for operations in the field. "Independent of these immense armies, the allied powers had collected, or were collecting, a variety of reserves, which in themselves constituted a mighty host—in all a mass of two hundred and thirty-five thousand soldiers, which, with the three grand armies of Schwartzburg, Blücher, and the crown prince of Sweden, already assembled on the frontier of the Rhine; eighty thousand Austrians, who, under Marshal Bellegarde, were destined to act in the north of Italy; and a hundred and forty thousand British, Portuguese, and Spaniards, who, under the guidance of Wellington, were assailing the south in Bearn and Catalonia,—formed a mass of a million and twenty-eight thousand men, which was prepared to act against the French empire—a stupendous force, such as

had never been before directed against any power in the annals of human warfare."

Now let us see how the great Napoleon looked this mighty gathering in the face. Great he was most assuredly, at this fateful moment, beyond all men—beyond himself. Mark his demeanour and his words: what unflinching self-confidence, what magnificent haughtiness!—

"Si fractus illabatur orbis,  
Impavidum ferient ruinae."

All the resolution, all the resources of his soul, spring into sudden effective action. There is no hesitation, no confusion, no doubt; but his whole conduct is firm, collected, rapid, and imperative. The huge difficulties and dangers, which would shake any other mind from its centre, seem but to establish his the firmer.

On his return from his German campaign, and after all his unparalleled disasters, he assumes a loftier bearing, a sterner aspect, towards his senate than he had ever done before. Reverse, instead of depressing him, only elevated his sense of his own importance and sufficiency for every emergency. He had such an undoubting faith in himself, that it would have appeared to him as unjust and preposterous to attribute his misfortunes to himself, as it would have been to attribute an earthquake, which should have engulfed whole cities, to the glorious beneficence of the sun. Self-reproach was a word of the meaning of which he had not the remotest conception. This was one secret source of the marvelous energy of his character. He saw every thing, and judged of every thing, in the light of self. Whatever thwarted his views and ends appeared to him morally out of course, out of order: hence his severity, his high indignation, towards all who opposed or who did not cordially second him. Instead of a defeated man, and one who had heaped on himself the fearfulest condemning responsibilities, he presents himself to France as a champion only greater, and stronger, and prouder from his falls, with which he decks himself as though they were victories. Nothing can equal the haughty and lofty attitude with which he stands in this hour of heavy retribution before the nation, declaring himself to be the nation, and uttering such fulminating words as these: "Why should we fear to speak the truth? Has not Wellington invaded the south? Do not the Russians menace the north? What shame! and the nation does not rise in a mass to chase them away. The same triumvirate which partitioned Poland has arrayed itself against France: we can have no truce till it is defeated. I demand three hundred thousand men: with what remains of my armies, I shall then have a million of soldiers. Councillors, what we require is energy; every one should march. Every one speaks of peace, that word alone strikes my ear; while every thing around us should resound with the cry of war. A year ago all Europe marched with us, at present all marches against us; that is because the opinion of the world is formed by France or England. We should have every thing to fear but for the power and energy of the nation. Posterity will admit, that if great and critical circumstances were presented, they were not above France and me!"

The author proceeds to treat of the remonstrance of the Chamber of Deputies, and of Buonaparte's indignant reply, and then enters into the particulars of the wonderful campaign which followed in France, and in which his character and genius, in all its breadth of light and shade, comes more fully out at this crisis

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We have seen what the force of the allies was at this time. That of the emperor would have been to any genius inferior to his own most inadequate to oppose the invading crusade. And even his genius, deserted by fortune, sunk under it. He had, indeed, upon paper most imposing resources. He had obtained from the senate, since 1812, successive conscriptions to the amount of 1,260,000 men, in addition to 800,000 who were a year ago marching, or in garrison, under his banners. But the conscriptions furnished him with but a trifling accession of men; and during the Russian campaign 500,000 had perished or been made prisoners of war, besides the masses which had melted away in Germany and in Spain. His paper-estimates, therefore, magnificent as they made his power appear to Europe, helped him nothing. He really had, at most, at his disposal not more than 350,000 men who could by any possibility be brought into the field; and these had to defend the frontiers of his wide-spread dominions, and to make head on the Rhine, on the Jura, and on the Garonne, against such a multitude of enemies. Deducing, then, the garrisons beyond the French territory, and the armies in Italy under Eugene, and in Spain under Soult and Suchet, it appears that the force "which the emperor had at his disposition to resist the invasion of the allies on the Rhine, did not exceed 110,000 men; and this force was scattered over an immense line, above 500 miles in length, from the Alps to the frontiers of Holland, so that at no period of the campaign could he collect above 60,000 combatants at a single point."

The allies, after much timid hesitation, despite their immense superiority of force, crossed the Rhine. Success attended their first movements. The armies of Blücher and Schwartzburg were united; and it was on them that the result of the invasion depended. Napoleon fell upon them first at Brienne; but notwithstanding the partial brilliant success he there obtained over Blücher, he was defeated the next day by the combined allied forces at La Rothière. And here began, when he seemed to be on the very verge of destruction, that surprising display of military genius which has gained such universal admiration.

After his brilliant successes he himself felt the whole impulse of the returning tide of victory which had now set in to his arms. Plotarsky, the Russian general, who had been made prisoner, having been brought before him, he exclaimed, "I now tell you, that as I have routed you to-day, I will annihilate Sacken to-morrow; on Thursday the whole of Wittgenstein's advanced guard will be disposed of; on Friday I will give Blücher a blow from which he will never recover; and then I hope to dictate peace to Alexander on the Vistula." And, indeed, on the following day the troops under Sacken were, after a bloody combat, well-nigh destroyed. Napoleon had, by his cross-march, cut the Silesian army in two, and could now attack its several divisions in detail. The victory of Montmirail, gained over Sacken, was the inevitable consequence of that of Champaubert; and the defeat of Blücher, in the battle of Vauchamps, which happened two days after, when the field-marshal himself, with his whole force, were nearly made prisoners. Napoleon had now within six days, since his terrible eruption on the enemy had commenced, weakened the Silesian army to the full amount of 20,000 men; had taken from

them 30 guns, 13 standards, and sent 7,000 prisoners to Paris. And the moral effect of his triumph was even more considerable; it well nigh neutralised the whole effect of the previous successes of the allies, and rendered problematical the final result of the invasion.

Even whilst these events were going on, Schwartzburg's army had begun to advance towards Paris by Montereau and Fontainebleau. But Napoleon being joined by Victor and Oudinot, turned from his successes over Blücher to put a stop to their progress; and in the combat of Nangis, and the battle of Montereau, gained two more splendid victories over an immensely superior force. "This last action," says Mr. Alison, "was inferior to none ever directed by Napoleon in brilliancy and valour." But it opened the eyes of the allies to the error they had committed in dividing their forces. They perceived now, that though greatly superior in number, they were no match for the great captain who opposed them, unless they could render their superiority overwhelming by a junction of the two armies. They came to the resolution of retreating behind Troyes in the face of a foe who counted about one to four of their force. Discouragement took at this time possession of them. They talked even of retiring behind the Rhine, and were intimidated at the idea that they might be prevented from doing so by an attack from Augereau, who was stationed at Lyons, in their rear. The emperor of Russia and Lord Castlereagh, who was, with Lord Aberdeen and Lord Cathcart, the representative of England at the congress of Chatillon, alone perhaps hindered the most pusillanimous counsels from prevailing. It was resolved that the Silesian army should be reinforced by divisions from the army of Bernadotte, when it should join the force under Schwartzburg, and provoke one decisive battle from Napoleon. The Emperor Francis at this time wrote a complimentary letter to his son-in-law; and the allies were obliged to solicit from him an armistice.

Of course we cannot be expected, in a notice like this, to pursue the history of this campaign further. Indeed, we believe we ought rather to apologise to our readers for recalling their attention to facts so well known as those we have recapitulated. On the entire view of it, Mr. Alison has very sedulously exhibited the great qualities, and all the striking peculiarities of character, which the whole conduct of the emperor at this time made so conspicuous, with an amplitude of detail, and a breadth of colouring, that he might otherwise have deemed unnecessary. He makes it appear even that the downfall of the emperor was probably owing to the greatness of his mind—to a truly heroic tenacity of purpose, and a confidence in the resources of his own genius, which, even after the event, we can hardly call misplaced;—that he thus fell by the very qualities which made him rise so high, and became the victim, as he had been the idol, of his own matchless superiority.

It is certain that by accepting the terms of peace which the allies offered him, which would have left him still the dominions over which Louis XIV. reigned, he might, down almost to the very latest period of the struggle, have secured himself on the throne of France. But we have always given our unqualified admiration to the perseverance with which he rejected these terms. What was the France of Louis XIV. to him? it was the France of the Revolution that had been committed to his charge. It is true that after the battle of La Rothière,

when it seemed impossible to hinder the advance of the allies upon Paris, he gave Calaincourt permission to subscribe the offered terms; but even then the reluctant and proud manner in which he consented to this concession was characteristic of the determination from which he swerved but for a moment.

By his rejection of the peace offered, Napoleon might be said to have destroyed himself, if his destruction could not be still more clearly traced to that sanguineness of temperament, that belief in his own ability, which led him to conceive himself an overmatch for his adversaries, though they so immensely outnumbered him on all sides. It was owing to this confidence in himself, that he kept up the full military establishment of all the outposts of the empire; whereas, had he recalled these troops, especially the army in Italy under Eugene, he might have added to his force sixty or seventy thousand veteran soldiers; with such augmented resources, the high probability is, he would have driven the allies over the Rhine, and obtained from them more favourable conditions. He, however, would not see the necessity of this reinforcement till it was too late; and when he did see it, he saw it to his ruin: for it was his march to St. Dizier, which he undertook in order to put himself in communication with the garrisons of the Rhine frontier, whence he might obtain new supplies of veteran troops, that opened the road to Paris to the allies. He had hoped that by threatening their communications in the rear, he should have effectually hindered their advance; but failing in this, they marched upon the capital, leaving the emperor actually behind them, and had possession of the city, before his utmost diligence could bring him back alone to Fontainebleau.\*

Thus it was that Napoleon defeated himself. "I am nearer to Vienna than you are to Paris; I am nearer to Berlin than you are to Paris; it is on the Vistula that I will make peace with Europe." These were the replies he constantly sent back to his enemies, in answer to the terms they offered him; and it was this indomitable reliance on his own genius that hurled him into the abyss.

Here, however, we must stop: we have plucked, as it were, but one thread from the web of the brilliant historic narrative which forms Mr. Alison's 10th vol. A book of more delightful reading is not to be met with. The subject, to be sure, has been so repeatedly treated, that it can offer at present but little novelty; yet the full, free, flowing style of Mr. Alison's narration, and the lucid order in which he has classed his materials, give a new aspect, and a new attraction, even to the events with which we are most familiar. But it is the philosophy of this work that gives it its chief value. The French revolution has been considered by many as having opened a new philosophical era to mankind; and so widely does this notion prevail, even with those who do not distinctly avow it, that it is rare to find any writer on the subject of the revolution, who does not regard it through a medium of its own, in the light of a philosophy itself revolutionary. The old Christian standards of right and wrong are deemed inapplicable to a time when these standards were in France not recognised; and there is a feeling that there is something narrow and prejudiced in submitting an infidel revolutionary epoch to the test of Christian principles. A new moral world having then, it is said, been broken into, it should be judged—the inference is, not by new rules, for new rules

there are none, but from new points of view, from the observatory (so to speak) of a vague and subtle metaphysics, which reduces right and wrong to their neutral elements, and leaves uncertainty on the throne of judgment.

Mr. Carlyle's work on the revolution exemplifies best what we mean. That writer welters about (to use a favourite phrase of his own) in a sea of doubtfulness; his mind is all circumference with no centre; and over his whole work there broods a mighty mystic enigmatical spiritualism, that give a sibyllitic complexity to his very style. Now Mr. Alison refuses to judge of the revolution by any other than the Christian rule; he abjures the metaphysical philosophy, which leaves every question problematical; he takes Christianity with him throughout, and never lets it go. It never recedes, it never gives place to, it enters into no compromise, no accommodation with, looser revolutionary ethics; but is always with him, giving clearness, simplicity, and decision to all his judgments. Of all books that have been written about the revolution, his is doubtless, for this reason, the most instructive: whilst other writers exhibit that wondrous portion of history in the cross, endlessly refracted, and confused lights of its own philosophy, Mr. Alison holds it up in the broad light of Christianity, by which its meanings, from being involved in a gorgeous apocalyptic obscurity, become plain, and its lessons as clear and luminous as they are grand and awful.

*The Great Duty of Frequenting the Christian Sacrifice*, &c., by R. Nelson, Esq. *A Memoir of the Author*, by W. B. Hawkins, M.A. London, James Burns.

IN our notice of the *Eucharistica* by the same publisher (see *Lit. Gaz.* p. 478), we adverted to the very handsome style in which that volume was printed and embellished. The present new edition of a valued Christian work, which has stood the test of a century, is also executed by our able coadjutors (Messrs. Robson, Levey, and Franklin) in a manner which does credit to their skill in typography, and, we must also repeat, to the liberal spirit of the publisher. It is exceedingly neat, and the red marginal lines on the page give it an air of complete finish, though it is not so curiously and richly ornamented in the ancient missal-style as its predecessor. We must own, we like to see devotional books done in this way; they seem to bring back a portion of the ancient feeling, together with the ancient faith, of our forefathers. The association of ideas is more than agreeable: it is holy and improving.

*A History of the Church, translated from the German of the Rev. J. J. Ig. Döllinger, D.D.* By the Rev. E. Cox, D.D. Vol. IV. 8vo. Dolman, Jones.

BRINGS down the history of the Romish church to the period of the Reformation, which it denominates a "mighty revolution, which has laid so many, before beautiful, regions spiritually waste;" from which a perfect notion may be formed of the spirit in which it is written, and as perfect a notion why we, ever eschewing polemics, say nothing farther respecting it.

*The Pulpit*. Vol. I. 1842. Double columns. Pp. 604. Lond., Sherwood and Co., Simpkin and Marshall; Edin., Oliphant and Son.

Forty volumes of this valuable mass of divinity having appeared in the popular manner of *The Pulpit*, the present not unworthy continuation commences a new series in half-

yearly volumes. We can hardly commend it too highly.

*Evidences of Revealed Religion; being an Appeal to Deists*. By S. Thompson. Pp. 153. London, C. Fox.

A FOURTH edition: a brief, but favourable-enough notice.

*A Scamper through Italy and the Tyrol; showing the Minimum of Expense and Time necessary for a Visit to the principal Italian Cities*. By a Gentleman. 12mo, pp. 120. 1842. Smith.

IN this little work there is a great deal of useful information as to distances, times of transit, and, more especially, as to pounds, shillings, and pence; beyond these items, however, we cannot say much for the *Scamper*. The gentleman who can be satisfied with four-and-twenty hours to see Genoa, four days to explore Rome (even Vasi allows nine, at post-haste speed)—and two to admire "fair Florence," is an example whom, we think, few would like to take as a pattern. Indeed, the sum of 39l. 3s. 6d. as expenses in travelling 3573 miles of civilised Europe, of itself shews the nature of the run. The author would probably have done better to have taken a fourth part of the tour, and for comfort have expended double the money.

*A General Armory of England, Scotland, and Ireland*. By John Burke, Esq., author of "The Peerage," &c.; and J. Bernard Burke, Esq., Barrister-at-Law. London, Churton.

A DICTIONARY of terms used in heraldry is a most useful and essential preface to this great work, which is a complete list of all the arms borne by the thousands of families in the empire which claim the privilege of gentle blood. On looking at the large double-columned volume, one is apt to fancy that the tax on armorial bearings must be more productive of national revenue than we fear it is; but there is great laxity now-a-days in the exercise of power by the Herald's College; and many a churl and villain sport their crests or family insignia as boldly as if they were entitled to the distinction. The work of Messrs. Burke, however—be such pretences what they may—is one which embodies the whole mass of information on the subject, which has been so long a desideratum; and we can truly recommend it to the public as a distinct and ample reference on all points connected with name, lineage, and armorie.

*Fluctuations of Corn, Currency, Consols, from 1790 to 1840*. H. Cholmondeley, Merch. London, E. Wilson.

IN three coloured diagrams or scales, and on the face of a sheet of quarto paper, we have by this ingenious plan a complete statistical view of the rise and fall, and of the relative prices, of the three great national elements stated in the title, by which the movements of the whole for half a century can be ascertained and measured at a glance. The causes are also noted; and the fund of information thus conveyed in a simple form is quite wonderful. Mr. Cholmondeley has, indeed, produced a very valuable document, which may well supply the place of twenty long essays upon these great branches of our country's economy and prosperity.

*The Shooter's Hand-Book; being the Treatise on Shooting from "The Rod and the Gun."* &c. Pp. 163. Edinburgh, A. and C. Black.

A "TIMEOUS" publication, as the 12th of Aug. and 1st of Sept. approach. Sportsmen will find the *Hand-book* a useful pocket-book, and very prettily embellished.

*The Present Condition of the Labouring Poor in Manchester, with Hints for improving it*. By the Rev. R. Parkinson, B.D., Canon of Manchester. Pp. 23. Lond., Simpkin, Marshall, and Co.; Manchester, Simms and Dinham.

THIS truly benevolent and sensible pamphlet has reached a third edition. It traces much of the error in ascertaining and endeavouring to alleviate distress to the ignorance of each other's condition, which exists among all classes of society. Such being the case, the author well suggests how much aid would be afforded, if masters and manufacturers kept a regular book of the state of the persons they employ, their earnings, families, habits, &c. By this means a moral map would be always at hand to be consulted, and a far more efficacious and just system of relief be adopted.

*The Penny Cyclopædia*. Vol. XXIII. Knight. BRINGS this useful dictionary towards its alphabetic close, being down to the word *Togus*. It continues to be ably and carefully compiled.

*Indecency assailed, in a Letter to Lord J. Russell*. By John Dixon, &c. Pp. 15. Sherwood and Co.

MR. DIXON is very indignant against indecencies committed in streets and public places; for the cure of which he proposes an act of the legislature and certain retirements. We are not quite clear that the remedy is practicable; or, if practicable, not as bad as the evil complained of.

*Colonial Agency*. Pp. 15. W. E. Painter. THIS little pamphlet points out the inconvenience often experienced by the proprietors of colonial property in getting their funds remitted; and proposes bonuses to tenants for speedy payments, and restrictions on agents, such as, we think, no honest, right-minded man would submit to.

*A Trip Home, with some Home-spun Yarns*. 8vo, pp. 424. London, Saunders and Otley.

A SERIES of a dozen letters, anonymous, with the usual plea in extenuation, that they "were not originally intended for the pages of a book, and that since that destination has been assigned them, for reasons which it is not necessary to intrude upon the public, they have received such revision as the author could give them." They appear to have been written by a colonist, a Barbadian, to a friend and resident in the island of his home, Barbadoes; and by one, seemingly, who had amassed money by sugar-making, and settled at Torquay. Perhaps the latter, if true, afforded the reasons for publication, or if not, perhaps the public has been favoured with them because the author had an old friend and fellow-countryman living there—for on Torquay and its neighbourhood the writer of the letters is most eloquent. We are fully impressed with the loveliness of the locality, and of its value to the invalid; but why, unless from some such motive as we have hinted above, should a strenuous defence of its situation, climate, character, and advantages be set up; angry feelings at what are termed the inaccuracies of Dr. Granville on these points be displayed; the inconveniences of the Madeira voyage be prominently put forth, &c. &c.?—and all this to a friend at Barbadoes, and after a sojourn at Torquay of six weeks!

We will not, however, prolong this speculation on the possible reasons for publication, which we have been led into perhaps from a disappointment to our hopes on taking up the volume. We had expected, when we found that the "trip home" was to England, and by a colonist, to read the results of observations on

the mother-country by one of her valued sons-in-law, competent to observe and record, and to compare with the characteristics and habits of the colony. Instead of this, after the first letter, descriptive of a commonplace voyage, the better part of the five following is filled with relations of Plymouth and its environs, and chiefly compilations too. Had these and the "Home-spun Yarns" all been original, there might have been somewhat of freshness in the volume. For this, however, we have sought almost in vain; although others, who know little of Devonshire or of the history of the dockyards, &c., might not be so unsuccessful. The following contrast of a view from the Tor Abbey grounds with the Barbadoes scenery has a spice of it; and we select it, conceiving it to be a good example of the author's own descriptive:—

"A lovely prospect lay before me: to the left, the lofty hill I have before spoken of, as forming the boundary of the basin of Torquay on one side, clothed to its summit with the dark foliage of a fir-wood, and washed at its base by the waters of the bay; beyond, the principal part of Torquay itself, the basin and the southern hill, clothed like its fellow, with a wood of evergreens. To the right, the bold front of Berryhead, Brixham, with its many fishing-smacks, hovering around the mouth of its little harbour, and the picturesque line of coast: whilst before me lay the broad expanse of the water, extending into the channel, enlivened by the presence of one or two large vessels passing up and down: immediately at my feet lay a considerable expanse of hard sand. The scene was very beautiful, yet I could not help giving the preference to our own sea-side scenery: in fact, prejudice apart, I know of nothing to equal that; I need not tell you where to go to look for the spots I have in my mind's eye; you must be well acquainted with the coast-road from town in both directions, along which they abound;—stop and refresh yourself and horse in the shade of that large tamarind-tree which grows by the side of the road, and contemplate the lovely scene; it will bear looking at again and again, and the more you consider it, the more I am sure you will admire; look with me at that resplendent line of sand, of purest white, sparkling beneath the rays of that glorious sun:—look at it through the tender and refreshing green of those young cocoa-nut trees, which surprise you by their luxuriant growth in that huge bank of sand which skirts the shore, and which is thus turned to profitable account;—see the blue, blue waves which come rolling in one after another, and in turn rising to the height of several feet, then curling over, and breaking into a light wreath of sparkling foam, then falling over, as in delight, upon the white sand, hurrying up its gentle rise to a surprising distance, as if in very sport; then rushing back apparently in the same mood, leaving a light veil of white froth upon its passive playmate, to be instantly dissipated by the heat of the sun, and the action of the strong breeze, which is almost always blowing from the east. Whilst you admire the unceasing succession of these sports of nature, you will see the process by which these sands, the debris of coral and of shells, attain their excessive whiteness: you will see that they undergo a never-ceasing process of bleaching, and I feel assured that you will admit that the elements of earth, water, fire, and air, could not be seen combined to greater advantage. For my own part, I must say, I know of nothing so exquisitely beautiful as these scenes, and as a single feature of them, the colour of the waves as they curl over, and allow you to see the strong

sun-light through them. I called their colour blue, but I am not sure that I am quite correct—say rather, that it is that of the most beautiful aqua-marine; on a large scale, I can compare it to some of the large masses of ice which one meets with on the glaciers of Switzerland, so situated as to allow of the transmission of a strong light through them, and particularly where they are excavated by the action of running streams, as at the source of the Arveron, which issues in a full stream from beneath an arch, which it constantly keeps open at the lower end of the immense sea of ice."

## ORIGINAL CORRESPONDENCE.

To the Editor of the Literary Gazette.

Norwich, July 19, 1842.

SIR,—I have just spent an hour in the Norwich Museum, which I visited for the purpose of personally examining the fossil skeleton, referred to by Prof. Owen at Manchester in his "Report upon British Fossil Mammalia," as a genus of mammals closely allied to the *Anoplotherium*, and which had lately been discovered at the village of Bacton, on the coast of Norfolk.

I expressed to the Geological Section, after the reading of Prof. Owen's report, my doubts as to the existence at Bacton or its neighbourhood of any tertiary beds in which the remains of an *Anoplotherium* could properly belong; and my examination this morning of the fossil in question satisfactorily establishes the correctness of those doubts,—since I find the jaws of the supposed *Anoplotherium* to be those of a common ruminant (probably stag or goat), and the discovery of which is a matter of every-day occurrence in the peat-bogs and modern deposits of this part of England.

I send you this hasty and very brief notice in the hope that its insertion in your next Number may prevent the proceedings of the British Association being quoted as an authority for the discovery of the skeleton of an *Anoplotherium* in the cliffs of East Norfolk. — I remain, sir, your most obedient servant,

EDW. CHARLESWORTH.

## ARTS AND SCIENCES.

BRITISH ASSOCIATION.

SECTIONS.—SATURDAY (continued).

SECTION C.

1. Mr. Griffith, "On Fossils of Carboniferous Limestone of Ireland."
2. Mr. J. Phillips, "Microscopic Observations on Coal."
3. Mr. Williamson, "On the Coal-formation."

1. Mr. Griffith, to whom the geology of Ireland is so deeply indebted, illustrated his paper by very large and admirably constructed maps, which at one view explained his data and opinions. Referring to these, he observed that the object of the present notice was to prove, through the medium of fossil remains, that the lower members of carboniferous or mountain limestone of Ireland, as arranged by him, did really belong to that series, and should not be attached to the old red sandstone or Devonian series, as had been advocated by some geologists. This difference of opinion led him to make a detailed examination of the whole of the carboniferous series of Ireland, over 1500 miles. He had discovered fossils in that series, and, in order to make the matter clear, had arranged them in three distinct tables, one for the south, one for the middle, and one for the north of Ireland. He objected to the term mountain limestone, which, though it might be suitable for England, on account of the mountainous character of the country in which that stratum

occurred, was not properly applied to Ireland. Mr. Griffith then gave a summary of some tables, which he had prepared, containing an enumeration of the various fossils found in the yellow sandstone, carboniferous slate, lower limestone, calp, and upper limestone of Ireland. From these tables (which occupy sixteen or eighteen broad quarto pages in a pamphlet which Mr. G. liberally distributed among the auditors), it appeared that the fossils of the carboniferous slate of the south of Ireland were, for the most part, common to the beds occupying the same geological position in the middle and northern districts; and from this he inferred that the whole should be included in one division of the series, notwithstanding their difference in lithological character. A similar inference was deduced from the correspondence of fossils found in the yellow sandstone and carboniferous slate, and from the upper and lower limestone and calp. These fossils were again compared with those of Great Britain, and also with those of North Devon, as far as they had been described in the works of Professor Sedgwick and Mr. Murchison, Professor Phillips, Mr. Sowerby, and others. The following are the results:—out of 80 species of fossils obtained from the yellow sandstone, 9 are peculiar to it, and 113 or 92½ per cent are common to the mountain limestone of Ireland generally; 49 species, or 40 per cent, are common to the upper limestone; 87, or 71 per cent, to the calp; 75, or 61 per cent, to the lower limestone; and 94, or 77 per cent, are common to the carboniferous slate. 35 species, or 30 per cent, of the fossils of the yellow sandstone, are common to North Devon; and 59, or 48 per cent, to the mountain limestone of Great Britain. Out of 275 species of fossils which have been obtained from the carboniferous slate, 12 are peculiar to it; 263, or 95½ per cent, are common to the mountain limestone of Ireland generally; 99, or 36 per cent, are common to the upper limestone; 176, or 64 per cent, to the calp; 162, or 60 per cent, to the lower limestone; and 94, or 34 per cent, are common to the yellow sandstone. In respect to North Devon, 65 species, or 24 per cent, are common to that series, and 139, or 50 per cent, to the mountain limestone of Great Britain. From these data he concluded that the yellow sandstone, which contains 92½ per cent, and the carboniferous slate, which contains 95½ per cent of fossils common to the other members of the mountain limestone of Ireland, must belong to that series. Our next subject for consideration (continued Mr. Griffith) will be, whether the mountain limestone of Ireland generally should be classed with that of Great Britain. To determine this point, if we refer to the table of results, we find, in regard to the upper limestone, that out of 180 species of fossils obtained, 133, or 73 per cent, are common to the British mountain limestone; of the calp, out of 267 species, 148, or 55 per cent; and of the lower limestone, out of 391 fossils obtained, 234, or 60 per cent, are common to the British mountain limestone; and, as already mentioned of the carboniferous slate, 50 per cent; and of the yellow sandstone, 48 per cent are common to the same series; and if we take the entire series, we find that out of 430 fossil species which have been described by the several authors already mentioned as occurring in the British mountain limestone, 287, or 67 per cent, are common to the mountain limestone of Ireland. Hence we must conclude, that the mountain limestones of Great Britain and Ireland belong to the same geological suite, though the Irish series generally, and particularly the lower members, con-



tain a great number of fossil genera and species which have not hitherto been discovered in the British. From the foregoing data it would appear, that there is a greater affinity between the upper limestone of Ireland and the British mountain limestone generally, than between it and the other members of the Irish series; but it should be observed, that the upper limestone contains only 16 species, or 9 per cent of the fossils which are common to North Devon, while the calp contains 43, or 16 per cent; the lower limestone 39, or 10 per cent; the carboniferous slate 65, or 24 per cent; and the yellow sandstone 35, or 29 per cent, in common with the same series. Thus we find a nearly regular gradation from the upper portion of the mountain limestone of Ireland into the upper Devonian; and although, owing to the predominance of ordinary mountain limestone fossils, the per centage is not considerable even in the lower members, still if we look to the table of results, referable to North Devon, we find that out of 122 species of fossils obtained from that district, 80, or 65½ per cent, occur in the mountain limestone of Ireland; and hence we can hardly entertain a doubt as to the propriety of attaching the fossils of North Devon to the mountain limestone series of Ireland. This is a startling result, which could not have been foreseen, from our previous knowledge of the fossils belonging to the British mountain limestone, which, as already mentioned, contains only 22 species of fossils, which are common to North Devon. Hence the conclusion arrived at by the distinguished geologists already mentioned, of the necessity of separating the Devonian system from the mountain limestone series, was perfectly legitimate, as regards even the northern portion of the district. It will be observed, that the comparison which I have made between the mountain limestone and Devonian fossils has been confined to those of North Devon. By making a similar comparison with South Devon, the results are essentially different, inasmuch as out of 257 species of fossils obtained from that district, only 94, or 36 per cent, are common to the mountain limestone of Ireland, and 26, or nearly 11 per cent, to that of Great Britain; a result that must lead to the conclusion, that the fossils of South Devon generally belong to a different, and, judging from the type of the fossils, to a more ancient, period than those of North Devon; though possibly a portion adjoining the culm series may eventually be found to correspond to the period of North Devon. Diagrams of a great number of the fossils were exhibited; the whole referred to in the tables amounting to 568 species, of which nine genera and 166 species were pronounced to be new by Mr. F. McCoy, of Dublin, who examined and named them. Mr. Griffith said, he had obtained all these species, and they now form a part of his collection. He had shewn some of them, on Friday, to Prof. Phillips and Count Keyserling; and they thought some of them had been already observed in Germany, and other parts of the Continent. He (Mr. Griffith) was perfectly certain, however, that he collected them in Ireland; and, if they had been observed on the Continent, he believed that the works in which they were described had never been seen in this country.

Upon this valuable communication some interesting remarks were made by the leading geologists present; and Mr. Griffith was generally and justly applauded for the extent and importance of his labours.

2. Professor Phillips said he had prepared a

communication on the microscopic observations on coal, illustrated with drawings, but he had lost them. On this account his communication would be exceedingly brief; but he hoped it would be interesting to those who were desirous of prosecuting similar observations. It was unnecessary for him to repeat to any person versed in modern geology, that there was no difference of opinion among geologists, who had well considered the subject, as to the fact of the vegetable origin of coal; but there was a difference of opinion as to the circumstances under which the vegetable masses were accumulated which formed what are now beds of coal; and in order that this subject might be perfectly understood, several courses of investigation might be followed. That which appeared the most obvious and direct was to examine the coal itself, in order to discover the nature of the plants of which it was made. In consequence of the facilities afforded for polishing it, and looking at it by means of transmitted light, some progress had been made in this mode of investigation. He was informed that Mr. Hutton of Newcastle had observed, in the Northumberland coals, certain cells in which large quantities of gas were contained; and that analogous cells were discovered in some anthracite coal received from South Wales, but with this difference, that the cells in the Newcastle coal contained small substances in them, while those of the anthracite coal were entirely empty. He (Mr. Phillips) had some time ago determined to put in practice some ingenious recommendations of Mr. Reeve, who had discovered the means of making apparent to the senses the vegetable tissues in fossils by a process of combustion. In March last, he had observed some Staffordshire coal burning in the grate, and he was led to inquire into the nature of the plant of which it was made. This coal was remarkable for the extraordinary curvatures it took during the progress of burning; indeed it formed complete curls. It was not what was called a bituminous coal, and did not cake; it was an open-burning coal, yielding an ash mostly white, and partly yellow. He was impressed with the analogy it presented to the combustion of certain sorts of peat of a laminated texture. In examining the ashes, he was gratified to find abundant traces of what appeared to him to be of a vegetable character. He had preserved some of these, and would now submit them to inspection. He had received from Sir H. de la Beche a quantity of ashes from the anthracite coal, in which ashes vegetable tissues were also found. Some years ago, he (Mr. Phillips) thought that the evidences were more in favour of the origin of many beds of coal from the drifting up of plants, than of the origin of beds of coal from plants growing on the spot; but he had since learned many things, which would have enabled him, had he known them before, to have made his argument more complete. The evidence now presented was one of many phenomena, which increased the probability that the plants were not laid together by the drifting of forests—it tended very much to diminish the force of the conclusions which he formerly entertained; but he was infinitely more delighted with the progress of truth than with the maintenance of any particular view. His communication was not yet in a state for publication; but he was anxious that it should be known that there was so easy a mode of detecting those vegetable tissues which enter into the composition of coal.

Dr. Buckland thought it better to refer the preparations laid on the table by Mr. Phillips to a committee of microscopic observers, than

invite discussion on that which nobody could see.\*

3. Mr. Williamson's paper discussed at great length the question alluded to in the note just written at the bottom of our page, i.e. the drift and subsidence theories; the latter of which, though supported on the evidence of the fossil-trees on the Bolton Railway and in other places, he considered to be inconclusive, and adhered to the drift-theory. His opinion was fortified by the occurrence of sea-shells and the remains of aquatic animals in the coal strata of sedimental, and he contended subaqueous deposit; especially the scales, &c. of the megalichthys. It is quite unnecessary to go into the details respecting sites and fossil remains, with which Mr. W. supported his hypothesis; which it was agreed should be considered in conjunction with a paper by Mr. Binney.

#### SECTIONS D.

1. Dr. Royle, "On the Growth of Cotton in India."

2. Mr. Bazley exhibited specimens of Cotton and of living Cotton-Plants.

3. Mr. H. E. Strickland, "On a specimen of *Halcyon Smyrnenis* from Asia Minor."

4. Mr. Dawbarn exhibited the Fruit of the Black Poplar.

5. Mr. Peach exhibited a collection of Shells from Cornwall, and some undescribed species of Cornish Zoophytes.

1. Dr. Royle's paper, as might be expected, made a great sensation in the capital of the cotton-spinning trade; and either sprung out of the efforts of the committee of the Royal Asiatic Society, on the products and commerce of India (of which Dr. Royle is so distinguished a member), or has been greatly advanced by that body. As we have lately, however, reviewed Dr. Royle's work on these important points generally, we do not deem it necessary here to go at length into the single question of cotton.

Dr. R. had originally believed there were eight species of cotton in India; but he was now of opinion that they might be reduced to four, the others being merely varieties. Two of these were natives of India; one, the common herbaceous cotton, which produced the cotton-wool imported into this country from India; the other, which he called *Gossypium arboreum*, grew in the hedges in many places, and especially near the houses of faketers. It was valued on account of the fineness and silkiness of its fibre, and was generally used in the manufacture of head-dresses. The third variety was that usually known as the Brazilian cotton, which differed from all others in bearing its seeds in clusters; and the fourth was the American cotton, originally, he believed, a native of Mexico; from which not only the Upland and Sea-Island cottons of the United States, but the Egyptian, Barbadian, and Bourbon cottons, had all been produced by differences of soil, climate, and cultivation. He had at one time doubted whether the black-seeded Sea-Island cotton could be of the same species with the green-seeded Upland; but he had heard such conclusive evidence of the gradual change of the one into the other by cultivation, that he could not entertain any further doubt upon the subject. Hitherto the quality of the American cotton had greatly excelled that of India; but he thought it would appear, that the difference had been caused rather by the skilful culture bestowed on the plant in America, than by any inherent superiority in the cotton itself. In America the cultivation of a cotton-field was

\* The grand argument whether coal-beds are formed by vegetation drifted into estuaries or seas, or by being covered *in situ*, seems to us very like the igneous and aqueous dispute of our forefathers; for it is evident that they are formed in both ways.—Ed. L. G.

conducted on the plan of a garden; that was, attention was paid to each separate plant, and no garden could be more carefully tended. The plants were kept about eight feet asunder; and each was carefully hoed, and kept perfectly free from weeds. In India, on the contrary, cotton was subjected to common field-culture; and the plants were not only permitted to grow up together, just as they might happen to spring, but were frequently mixed with other crops, and almost universally choked with weeds. In America, too, great care was exercised in the gathering of the cotton as soon as it was ripe, and before the leaf, growing close under the pod, became withered and friable, so as to mix with the cotton. In India very little care was taken on this head; some of the pods were gathered before they were ripe, and others allowed to remain on the plant till the leaves were withered; the cotton was consequently mixed with fragments of them, which greatly diminished its value in the market. Then, again, after being gathered, instead of being immediately separated from the seed, as in the United States, it was frequently stored for months in pits in the ground; and the oil oozing out of the seed, greatly injured its colour and fibre. Until, therefore, an adequate trial had been made of a more careful system of culture and management in India, it was impossible to say what would be the quality of the produce of that country. Dr. Royle then detailed at some length the different experiments which had been made during the last fifty years, under the auspices of the court of directors and the Indian government, to introduce new varieties, and an improved system of culture. These, however, had been too much confined to the mere introduction of new varieties, instead of promoting a more careful and scientific mode of cultivation. One fact, at least, had been demonstrated by these experiments—namely, that the exotic species of cotton did not perish or deteriorate in India; for they were growing wild in the neighbourhood of several of the places where they had been cultivated, and in other places the cultivation had been continued by the natives.

Samples of the cotton produced at Coimbatore were exhibited to the Section; and the New-Orleans cotton grown on the red soil was quite equal to the first qualities of the same cotton produced in the United States.

General Briggs expressed an opinion that American cotton would not eventually be found to succeed in so low a latitude as Coimbatore; and that the land-tax in that part of India would also present serious obstacles to successful cultivation. After some little discussion on this subject,

Dr. Royle stated that he had not the slightest doubt that India would shortly produce an abundant supply of cotton of every quality that could be required, and at a price which would give it a preference in this country. Even if the produce per acre should be smaller than in the United States, it must be recollected that the expenses of cultivation were also much smaller,—costing in India only about six or eight rupees per acre; whilst in the United States it amounted to at least sixty rupees.

The other proceedings in this Section offered nothing of general interest, though they supplied some curious botanical and zoological novelties.

#### SECTION F.

1. Mr. Shuttleworth, "On the Vital Statistics of the Spinners and Piecers employed in the fine Cotton-Mills of Manchester."  
2. Sir Charles Shaw, "On the Criminal Statistics of Manchester."

3. Mr. James Heywood, "Tables relative to Degrees taken in Oxford and Cambridge during the 16th, 17th, and 18th Centuries."

4. Prof. Powell, "On Academic Statistics."

5. Mr. Porter, "On the Monte de Piété in Ireland."

1. Mr. Shuttleworth addressed the meeting, with his paper in his hand, referring to it occasionally for the particulars in a tabular form.

The tables which I have to present to the Section relate to the nineteen cotton-mills in Manchester, which are engaged in spinning fine numbers of yarn. These are the whole of the establishments in this town so employed. As such mills require to be kept at a higher temperature than is necessary in spinning common numbers, it has been generally considered that the health of the work-people engaged in them was exposed to more injury than attended any other kind of factory-labour. In consequence of this prevailing opinion, and as the conditions under which the fine spinners are placed are certainly somewhat peculiar, it was thought desirable, when the factory-commission was appointed in 1833, to collect a body of information, which should be confined exclusively to them as a separate and distinct class of spinners.

The parties concerned in the inquiry, anxious to have the facts collected under such circumstances as to entitle the statement of them to every confidence, requested me, as a person wholly unconnected with the spinning business, and having no interested feeling in the result of the investigation, to undertake the responsibility of conducting it. I accordingly drew up a series of questions, to be answered personally and individually by each operative spinner—to agents, consisting of professional accountants, and one of our most respectable and intelligent surgeons, who were employed to go through the mills, and receive the answers of the workmen. That the answers might be given considerably, and after due preparation, every spinner was furnished with a list of the questions a day or two before the agents visited them to receive their replies. The facts and statements, thus most carefully and scrupulously collected, were then arranged by me under the heads exhibited in the tables, and afterwards delivered in evidence to the factory-commissioners sitting in Manchester at the time, and their accuracy verified on oath by myself and the agents employed. It happened, however, that the documents were not forwarded to London until the commissioners sitting there had decided on closing the inquiry; and these tables therefore were not included in the report of the commission. As the information they contain is entitled to the fullest reliance, and has not hitherto been published, I have been requested to offer it to this Section as a contribution which may possess some interest and importance in vital statistics.

The 19 mills in question worked 69 hours per week, and employed 837 spinners, who are adults, of whom

16	were under 21 years of age.
176	from 21 to 25 inclusive.
196	" 26 — 30 "
155	" 31 — 35 "
132	" 36 — 40 "
89	" 41 — 45 "
33	" 46 — 50 "
12	" 51 — 55 "
5	" 55 — 60 "
And 1	above 60.

837 Total.

And these spinners employed 3233 boys and girls as piecers.

The tables are five in number.

The 1st contains the number of spinners in each mill, classed into periods of five years, ac-

cording to age, from 21 to 60. The average years that the spinners of each period had worked in cotton-mills; and the number of individuals in each period who had been sick, and the number of days of sickness, in the year 1832.

The 2d contains a statement of the number and ages of the spinners unmarried, and the same married; the ages of their wives when married; the health and mortality of their wives; the number and mortality of their children; the number of children that have never worked; the number of children that have worked in cotton-mills; the number that have worked in other employments; the mortality of the children in each class; the cases of distortion; and the cases of mutilation from machinery.

The 3d is a statement of the number of spinners; their average age; the years they have worked in mills; the state of their health; the number of piecers; and the opinion of the spinners on the effect of factory-labour on the health of the piecers.

The 4th contains a digest of the facts stated in the preceding tables, relating to the spinners and their piecers.

The 5th is the same, relating to the wives and families of the spinners.

The general results are as follows:—There are 837 spinners, whose united ages are 27,367, making an average of 32 years for each spinner. They have worked in cotton-mills 19,133 years, which is equal to 22 years and 10 months for each. Of the total number, 255, or nearly 30½ per cent, were absent from work on account of sickness in the year 1832, an aggregate of 6,296½ days, or an average of 24½ days for each of the 255 who were sick, or 7½ days for each of the whole number of spinners employed. Of the 837 spinners, 621, or 74 per cent, reported themselves to have "good;" 171, or 24 per cent, to have "pretty good;" and 45, or about 2 per cent, to have "indifferent health." The 837 spinners employed 3233 boys and girls as piecers, or something less than an average of 4 piecers to each spinner; of these piecers, 488, or 12 per cent, were relations of the spinners. 707, or rather more than 84 per cent, of the spinners were married. The united ages of the wives, when married, were 15,376½ years, equal to 21 years for each. The number of years of the marriages was 7,907 and 5 months, equal to 11 years and 2 months for each marriage. In this period 26 of the wives, or rather more than ¾ per cent, were dead; and 681, or nearly 96½ per cent, were living. Of the living, 422, or 62 per cent, were reported to enjoy "good;" 151, or 22½ per cent, to have "pretty good;" and 108, or 15½ per cent, to have "indifferent health." The married spinners had had 3166 children, equal to 4½ to each marriage. Of these children, 1,922, or 60½ per cent of the whole, were alive; and 1244, or 39½ per cent, were dead. Of the children alive, 1,225, and of those who were dead, 1,221, making 2,446, or 77½ per cent, had never been occupied in any kind of work. 640, or about 22 per cent of the whole, had worked in cotton-mills; and 58, or nearly 1½ per cent, had worked at other employments. Out of the 640 who had worked in mills, 18, or about 2½ per cent, were dead; and out of the 58 who had worked at other employments, 4, or nearly 7 per cent, were dead. The cases of distortion among the 640 factory-children were, 8, or 1½ per cent; and there were among them 7 cases, or something more than 1 per cent, of mutilations by machinery.

A long discussion ensued on Mr. Shuttle-

worth's paper, in which much stress was laid on the comparative good health, and freedom from accident, enjoyed by spinners in cotton-mills, in contradiction to the received opinion, that the employment was unhealthy, and the workpeople exposed to mutilation and loss of life. It was stated, *inter alia*, however, that there were ten years of difference in the duration of life between country-mills and town-mills; and the salubrity of the occupation, as equal to that of agricultural labour, was ascribed to the business being carried on under cover. In answer to a question by Mr. P. Holland, Mr. Shuttleworth said, that the average sickness of these 837 spinners was rather more than seven days per cent per annum. Mr. Holland thought this was a remarkable fact. In the Plymouth dockyards the average sickness of the men was 14 days per cent per annum. It would seem, then, that factory-employment, which was generally considered one of the most unhealthy occupations, was, in reality, more healthy than that of the persons employed in dockyards, although the latter were constantly in the open air.

It seemed to be generally conceded that the tendency of factory-work was to shorten the duration of life, though it was difficult to trace what became of such individuals as left the factories after they arrived at that age when their strength was no longer adequate to the labour. Mr. E. Chadwick mentioned that inquiries were now in progress to ascertain these points, which would, in his opinion, remove many of the errors that prevailed. Where mills were situated in rural districts, and where the dwelling-houses of the operatives were properly constructed, the health of the factory-workpeople was fully equal to that of persons employed in field-labour. At the village of Catrine, in Ayrshire, for example, it had been ascertained that the annual mortality was one in fifty-four of the factory-operatives; while in Manchester the number of deaths was one in twenty-eight. This ought to convince any one that it was something else than the nature of their employment which gave rise to so high a rate of mortality among the inhabitants of Manchester. He had often heard it said by the factory-commissioners that they could tell at once, from the appearance of a spinner, whether he had worked in a well-ventilated mill or in one badly ventilated; and also whether he resided in a part of the town which was properly drained, or the contrary. In a mill, lately built by Mr. Smith of Deanston, the rooms of which were 16 feet high, and the whole of which was ventilated on the best principle, he understood that the average sickness was not more than half of what had been stated by Mr. Shuttleworth as occurring in the mills in Manchester. When mills of that construction had become general, when the dwelling-houses of the poor were built with due regard to the health of the inmates, and when the drainage of the streets in which the labouring classes chiefly resided was thoroughly enforced, he had no doubt, that so far from the value of life among them being below the average, it would be found to be considerably above that of agricultural labourers. In the village of Deanston that state of things had already been realised: the health of the spinners there, according to the testimony of the medical men in the neighbourhood, was much superior to that of the rural population.

Mr. G. W. Wood, who was in the chair, closed the discussion by observing that, before another twelve months had elapsed, in all probability a drainage-bill and a buildings-regula-

tion-bill would have removed many of those sources of disease in large towns to which allusion had been made.\*

2. Sir C. Shaw (the chief commissioner of the Manchester police-force, and to whose care and conduct the town and neighbourhood are deeply indebted) brought forward a statement of the criminal statistics of the place, furnishing facts of extreme importance to all populous parts of the empire. His analysis of cases of misdemeanour brought before the police on Saturdays and Sundays from the 22d January to the 15th of June 1842, gave very curious and striking results, which were clearly shewn in a well-constructed table of classes, crimes, sexes, employments, religion, educated or uneducated, place of birth, &c. &c.

Hence a clue to the discovery of some of the sources of crime and immorality which seem to have escaped general observation, was found:—thus, out of 646 offenders, 320 wanted employment on an average of eight months and twenty-five days previous to their apprehension;—of 326 persons in employment, and receiving weekly wages, 318 had been paid on Saturdays;—of 146l. 12s. 8d. (money in possession of offenders on leaving their homes), 91l. 0s. 7½d. was obviously squandered in promoting drunkenness, crime, and misery;—the number of children exposed to want by such improper expenditure amounted to 674;—27 persons were actually paid in beer-shops, &c.; thereby placing them in the most favourable position to get drunk;—of 646, only 53 prisoners had been visited by clergymen, and received religious instruction:—that of 646 taken into custody, 446 were natives of England, 14 of Wales, 14 of Scotland, 172 of Ireland; 299 were of the Established Church, 85 of the Roman Catholic, 45 of dissenting churches, and 217 who stated they had “no religion.” From which analysis we infer, that the greater portion of crime, debauchery, &c. which takes place on Saturdays and Sundays, is caused, in the first instance, by the weekly payment of wages on Saturdays;† 2dly, by payment of wages in beer-shops, public houses, &c.; 3dly, by want of proper religious instruction; 4thly, by want of some employment.

3. 4. Mr. James Heywood's and Mr. B. Powell's communications brought out some antiquarian information relative to the number of degrees, &c. taken at Cambridge and Oxford in the 16th and 17th centuries, shewing their increase to the present date. Mr. Powell's paper was a continuation of one he read at Birmingham, and related to the proportion of students at Oxford who proceeded to degrees, instead of “not coming up to the scratch,” or “being plucked.”

5. Mr. H. J. Porter on the *Monts de Piété* in Ireland, continued his account of these pawn-broking establishments, which he held to be eminently beneficial to the poor.

#### SECTION G.

1. Mr. G. W. Buck, “On the Pressure of Earth against Walls.”

2. Sir J. Robinson, “Notice on making Street-paving Blocks from Round Timber, now proposed in Paris.”

\* In these statistical inquiries as to the health and longevity of various manufacturers, we were rather surprised never to hear reference made to Mr. Thackeray's curious volume on the subject, which we remember reviewing in the *Literary Gazette* a good many years ago.

† This seems to be the most prolific source of crime and misconduct. The Sunday immediately following is an idle day; and the released labourer, with money to spend, is but too apt to fall into irregular and vicious courses. Where wages could be paid in the middle of the week, it would remove the temptation to evil, and go far to remedy this degradation among the lower orders.—*Ed. L. G.*

3. Mr. J. Grantham, “On Iron as a material for Ship-building.”

4. Mr. J. S. Russell, “Report on the form of Ships.”

5. Prof. Moseley, “On the Constant Indicator.”

6. Mr. Vignoles, “On Lebeuhelm's new principle of Manufactures for Tapestry, Carpeting, &c.”

7. Capt. Sleigh, “On Floating Breakwaters.”

The above was the list for the day; but, with the exception of No. 6, which we have thought deserving of a more copious report, we have now merely to say that

(3.) Mr. Grantham read a short paper on the use of iron in the construction of vessels, insisting (as in his publication on the subject) on the advantages of iron over timber; and explaining certain improvements in the building of iron vessels.

(4.) Mr. S. Russell made a communication on some experiments which had been made with a dynamometer of new invention for the purpose of testing the force necessary to tow vessels constructed according to the models suggested by his experiments on waves, the results of which shewed that the force necessary to tow through the water, at a given speed, a vessel on that construction, was very much smaller than that necessary for a vessel built according to the ordinary rules.

(5.) Prof. Moseley read a paper on the results obtained from a new indicator for steam-engines, by which the amount of work actually performed is accurately registered. After detailing these results, he remarked that the importance of an instrument by which the proprietors of steam-engines could obtain an accurate record of the work actually performed by them, could scarcely be overrated.

(6.) This paper was read by Mr. Vignoles. Mr. Duncan, of London, attended on behalf of the original inventor, M. Lebeuhelm, of Berlin, to give explanations. The specimens exhibited were of the most various character:—a magnificent full-sized copy of the *Battle of Austerlitz*: one of the celebrated picture of Lord Francis Egerton's *Hawking-Party*, in which the likeness of the noble owner was faithfully preserved; this specimen had all the striking character of the original painting, and was of the same size. A third was a copy of Raphael's *Holy Family*, soft as a miniature: fruit, flowers, birds, and a variety of exceedingly beautiful carpeting patterns.

It may be observed, that the principle of multiplying copies by transverse sections of numerous vertical stems closely cemented together, appears in the mode in which the ancient mosaics, consisting of parallelepipeds of stone, and the modern Tunbridge Wells ware, of similar pieces of wood, are each made. But the application of the same idea to wored in the India-rubber solution as a cement, gives us one of the most extraordinary creations of the present age.

The fabrics of carpet, tapestry,\* &c., now exhibited, are formed in their exterior and pictured surface with the ends or points of very short cuts from woollen threads, dyed of various colours previously to their being used or applied. There is no printing, nor putting on, nor dabbing on of colours. All the colours seen are produced from the ends or tips of dyed threads of these colours being presented to the eye and being placed together. The blending and shading are merely effects of skill in placing threads side by side so as to produce the results intended. These short cuts do not exceed in length one-eighth of an inch, and are all standing vertically. While one end

\* We first directed attention to these beautiful fabrics in *Lit. Gaz.* No. 1320, p. 314.—*Ed. L. G.*



of each of these cuts is presented to the eye, the other is made to adhere to a cloth by means of dissolved Indian-rubber. Familiarly it may be said, that the root fixed firmly in an Indian rubber soil throws up its short stem of beauty. Necessarily these stems are numerous, but varying in number according to their thickness; some of the specimens produced contained as many as 4000 cuts or ends of threads within the surface of a square inch.

If each pattern or picture could not be multiplied so as to furnish hundreds or thousands of fac-similes, the fabrics exhibited would be elaborate works of art, curious and interesting; but being then necessarily produced at more cost of time and money than oil-paintings, which would be much superior to them, they would literally be useless except as curiosities in selections of works of art, by reason of the materials with which they had been constructed. These fabrics, however, while they form the triumph of art, as produced from dyed woollen threads, possess the far greater and more extraordinary advantage, that they are capable of being multiplied, when once produced, into any number of fac-similes. The process, as far as regards the peculiar machinery by which the fabrics are produced in numbers and with such perfection, is a secret, or a description of it, with drawings, would be furnished; but it approximates to the following method, at least in its principles.

Two frames, containing perforated plates of zinc, or a reticulation of very fine wires or stiffened canvass, may be considered as placed, say, the upper frame five feet from the lower one, and each being of a similar size, say, to the picture now produced of the Holy Family after Raphael. Dyed threads of wool are passed by a workman, possessing the skill of an artist, through the frame below, and then, being kept exactly perpendicular, through the frame above. On viewing the top of the frame above, when cropped or cut even, the workman finds that he has formed a picture of the holy family, every thread being to his satisfaction in its proper place to produce the form, the features, the colours, the lights and shades, he wished to express. The whole mass of threads between the two frames forms one block of picture. Measures are adopted for compressing this mass together tightly, so that it shall bear the process which has then to be pursued. This consists in smearing the upper surface with dissolved Indian rubber, upon which a canvass or cloth of the size of the frame is placed. The canvass adheres to the Indian rubber, and the ends of the threads of the picture take root in it, and also adhere with surprising firmness. With a very sharp instrument the block of wool is then sliced through at the distance of an eighth of an inch, or more or less, as the manufacturer pleases, from the ends fixed into the Indian rubber, and thus picture No. 1 starts into life. This process is continued with the whole block of threads, a like picture being obtained from every slice taken from the block. If the block of wool be five feet in length, and each picture took away an eighth of an inch from the length of the wool, one block would form 480 facsimiles, without any waste of material. There is no limit, but the size of the manufacturing rooms, to the length of these blocks, at least so we are assured; and consequently thousands of fac-similes can be produced of any pattern. Instead of the cuts being an eighth of an inch, they may be longer or shorter. For curtains, table-covers, or other pliable articles, the short cut would be used; while for carpets and rugs,

where a thick rich frail was desired, the cuts would be of greater length. The manufacture of these articles appears to be adapted for chair, sofa, and ottoman-covers and table-mats, tapestry for walls and ceilings, curtains, screens, and table-covers, and for hearth-rugs and carpets; and, considering the extraordinary beauty of the articles, they can, in consequence of the certainty and rapidity of the manufacture, and the multiplication of the patterns, be furnished at a cheap rate; say from 4s. to 20s. per square yard, according to the design, quality, and finish.

Although the manufacture of these articles is not of British origin, nor at present existing in Great Britain, to produce commercial results, yet it is to be expected that a country so eminently skilled as England is in the fabrication of every article which is ornamental and useful, may be excited to vie in this new branch of trade with the progress of its foreign neighbours; and if there be one place in the world more than another where industry and skill stand pre-eminent in accomplishing every thing that is possible and great in manufacture, it is Manchester.

*The Common Dinner.*—In the evening the Union-dinner took place in the Wellington Concert-room, a spacious and well-proportioned hall. The President in the chair: and on the dais beside him many distinguished persons, as there were indeed at all the long tables which stretched down the floor. With the details of this entertainment we need not fill our page: suffice it to say that it went off in a very agreeable and satisfactory manner. The address of Mr. Murchison was peculiarly happy, and his offer of a motto for the Association (after Mr. Whewell's opening damper) was hailed with loud applause. "ESTO PERPETUA" was thus adopted for future ages, and we doubt not, will never be forgotten at the future meetings. Professor Sedgwick's and the American Minister's speeches were also eloquent and effective, even beyond the general tone of the evening, though made gratifying by acknowledgments from such men as Bessel and Jacobi. We cannot resist the pleasure of transcribing the following heart-born passage from Prof. Sedgwick's touching address. After speaking of some of the proceedings of the Association, he said: "There was, however, a promenade which I took in the earlier part of the day, which produced a still deeper impression on my mind.—I mean a walk through some of the dark streets, corners, and alleys of your town, amidst the smoke of chimneys and the roar of engines; and there I had exhibited to myself some of the most wonderful monuments of skill ever matured by the hand of man, and forming some of the glories of your town. But in going through these dark corners, in talking to men whose brows were smeared with dirt, and whose hands were black with soot, I found upon them, nevertheless, the marks of intellectual minds, and the proofs of high character; and I conversed with men who in their own way, and in many ways bearing upon the purposes of life, were far my superiors. I would wish the members of the British Association to mingle themselves with these artisans, in these perhaps overlooked corners of our great cities; for, as I talked with them, the feeling prevailing in my mind was that of the intellectual capacity manifest in the humbler orders of population in Manchester. This is a great truth, which I wish all the members of this Association to bear away with them, that while the institutions and customs of man set up a barrier, and draw a great and harsh line between man and man, the

hand of the Almighty stamps its finest impress upon the soul of many a man who never rises beyond the ranks of comparative poverty and obscurity. Hence arises a lesson of great practical importance, that we should learn in our walks through life, in our mingling with the busy scenes of the world, a lesson of practical wisdom, of kindness, of humility, of regard to our fellow-beings. If we aspire to the name and character of philosophers, let us also have a longing after the character of benevolent men and Christians. Do not suppose for a moment that I am holding any levelling doctrines; far from it. I seek but to consolidate the best institutions of society; for in these same walks I have impressed upon my mind at every step the great importance of law and order; for what is all intellect but the manifestation of law and order of a particular kind? But I do wish that the barriers between man and man, between rank and rank, should not be harsh, and high, and thorny; but rather that they should be a kind of sunk fence, sufficient to draw lines of demarcation between one and another, and yet such that the smile of gladness and the voice of cheerfulness might pass over, and be felt and heard on the other side."

From Mr. Everett's address we select also the following passages:—"Suppose that my friend, the president of the Geological Section, at this end of the table (Mr. Murchison), should be able to make a visit to us in the west, as he has ventured so far into the north and east, and were able to add a grand Transatlantic Silurian kingdom to that domain which his ingenuity has conquered at home, and to establish beyond doubt, that, in the primeval ages, our two countries were part and parcel of the same continent, and that the ocean-billows which now separate them are but the remains of that grand cataclysm in which the isthmus of communication was submerged;—would not this be hailed with pleasure, and this splendid generalisation be welcomed by every man of science into the circle of his favourite theories? Then, I ask you, gentlemen, is it a less interesting fact, that, in crossing this mighty ocean to America, you find there the traces, not of similar strata of coal and gypsum, not the like formations of sandstone, and granite, and graywacke, but the traces of kindred families of rational beings? Is it not a delightful fact, that the foot-prints you first meet there are not those of the fossil animals, whose paradoxical existence was ripened in ages into which history strives in vain to penetrate even to the vestibule—but the footsteps of men, of kindred men, of men descended from your blood and your revered ancestry, and called with you hand in hand to walk together over the great stage of accountable existence, and to engage with you in the investigation of all those high and grand problems that are tasking the minds of civilised men in this age of the world? It seems to me, my lord, that if it is the great object of science, as Sir John Herschel has said, to expand and elevate the mind, is there in the topics considered by all the Sections this day—is there one more calculated to expand and elevate the rational mind, than such a connexion between two great countries? Why, it is only since the reign of James the Second and Charles the First, which is but as yesterday in the long line of British history, that a few adventurers rather stole across the ocean than navigated it. Two hundred years have passed away, and, out of that little insignificant germ of national existence, millions and millions have grown up, and formed a great and mighty nation, in close connexion with your own.

And in whatever light we regard each other, whether commercially, politically, literarily, socially, or morally, it is destined, like the dearest connexion of domestic life, 'for better and for worse,' to exercise an all-powerful influence upon each other,—I believe I may say, without exaggeration, to the end of time. Why, my lord, when we are prosperous—when America is prosperous—her prosperity is felt in the hut of the humblest hand-loom weaver in Lancashire; when our industry languishes, do not the pulses of your industry, especially here in this noble city of Manchester, beat (I am sorry to say) proportionally feeble and slow?" After some striking allusions to the growth of cotton in America, and its introduction into British manufactures, he added, "This is one illustration of our connexion, drawn from the material world. In the world of science, I would rather say there has never been a separation between us. There are no boundary-questions here."

#### MONDAY.—SECTIONS.

[We now address ourselves to the proceedings of this day, generally one of the most miscellaneous in the meeting; and comprehending very various and useful information.]

#### SECTION A.

1. Prof. Brachmann, "Considerations upon the Principles of Equilibrium and Motion."
2. Prof. Jacobi, "On a new general Principle of Analytic Mechanics."
3. The Dean of Ely, "Upon the Report of the Commissioners for the Restoration of lost Standards of Weights and Measures, and upon their proposal for the introduction of a Decimal System."
4. Mr. W. S. Harris, "Reports of the Meteorological Observations made at Plymouth during the last year."
5. Prof. Bache (of Philadelphia), "Report on the Meteorology of the United States of America."
6. Mr. Nasmyth, "Application of the Theory of Definite Proportions to the explanation of the Forms of Clouds."
7. Mr. Hopkins, "On the Meteorology of the Northern Atlantic."

1. After the oral communication by Professor Brachmann, the Dean of Ely expressed a hope that the valuable exposition, of so abstract and difficult a nature, given by the learned professor might be reduced to writing, and delivered to the Association. And Sir W. Hamilton concurred, and observed, that all, even those familiar with publications on the subject, would fully agree, that to understand the considerations advanced by Prof. Brachmann, a written abstract was requisite. Need we say more to shew the inutility of attempting to convey a knowledge of such communications in a brief summary?

A like remark is applicable to the paper (No. 2) by Professor Jacobi, translated from the Italian language, read, and designated by the Dean of Ely as one of the most important announcements ever made in modern times. Prof. Jacobi's new general principle of analytic mechanics may be applied to a great number of questions in the integral calculus; and we are happy to inform mathematicians that the distinguished professor has collected these several applications into a very extensive memoir, which he hopes to publish on his return to Königsberg, and to present to the Association as soon as printed.

3. The "Report of the Commissioners (Herschel, Bailey, Lubbock, Sheepshanks, Peacock, &c.) for the restoration of the standards of weights and measures lost in the fire of the Houses of Parliament, and their proposal for the introduction of a decimal system," has been already published, and is doubtless in the possession of most of those whom it concerns for consideration or adoption. At present, of course, it represents only the recommendations of men who have minutely examined the sub-

ject, and who form a most efficient board for such investigation, but of recommendations which are likely to be approved by the legislature, and to become the law of the land. The principal changes then likely to come into operation are a decimal scale of coinage and a decimal subdivision of weights and measures. The commissioners were nearly unanimous in the decision to adhere strictly to all the primary units, viz. the pound sterling, the yard, and also the foot, the acre, the gallon, and the imperial pound,—believing that any attempt to interfere materially with these primary units in ordinary use would produce much confusion and had consequences in the every-day transactions of life. They recommend, however, with regard to weights, that the standard pound should be the representative of the aivoirdupois, and not, as hitherto, of the troy pound; and that hereafter the use of the troy pound should be abolished, except for a very limited number of transactions. And farther, with regard to weights, that a uniform weight of 10 lbs. to the stone should be introduced as the subdivision of the cwt. of 100 lbs., to be termed a *centna*, instead of the present varying values of 8 lbs., 14 lbs., and 16 lbs. to the stone. The only change proposed for the measure of a length was not a general one; it had reference only to the standing orders of parliament in railway-matters, &c., and only concerned surveyors, engineers, &c. It was the introduction of a measure of a 1000 yards, to be called a *myliard*. The standard measure of capacity is to be one of weight, and not of volume, as heretofore. The main changes are in the coinage in order to establish the advantage of the decimal scale, the value of which to bankers and merchants, and the improved facility of calculations, and conversion of relative values, were pointed out. Taking the pound sterling as the primary unit, it is proposed to introduce a coin of the value of 2s. (one-tenth of the pound); another, either silver or copper, of one-tenth of 2s. (or 2d. and a fraction), which might be called a *cent* (the hundredth of a pound); and the thousandth part of the pound sterling, or nearly the value of our farthing (of which there are 960 in the pound), which new coin it was proposed to call a *millet* (from thousandth). For the proposed coin of 2s. various names had been suggested, as *Victorine*, *rupee*, or *florin*; it being not much different from the value of some of the rupees of the East Indies, or the florin of the Continent. Under this new decimal scale the shilling would be retained, and also the sixpence (but the latter under another name, more representative of its value). For the half-crown would be substituted the 2s., or *Victorine*.

With regard to the new terms, of course the nomenclature can only be determined by the legislature. Each commissioner had sent in a list of names, which, when compared, the collection was extremely ludicrous in association: we see no objection to those used by the Dean of Ely; and we agree with him that the universal change can only be effected, as in the case of the guinea and the sovereign, by a simultaneous withdrawal and an extensive coinage and issue.

4. Mr. S. Harris stated, that at the close of the year 1842 he should be able to revise (and bring to the next meeting of the Association) the results of the series of observations continued hourly, night and day, without material interruption, during ten years. He now submitted only a general discussion of five years' observation of the barometer, and the same length of observations and experiments on the

wind, made with Prof. Whewell's anemometer, during the years 1837 to 1841, both inclusive. The observations were made at a height of 75 feet above the level of the sea, and 35° Fahr. He exhibited a chart, shewing the lines resulting from the means in each of these years, and also the mean of the whole five years; and noticed the surprising coincidence in the general character of all these lines, and the very few and small deviations they presented—a remarkable result, considering the frequent atmospheric disturbances to which they were liable in that latitude. The mean pressure of the six years corresponded with that already obtained. The line of mean pressure occurred between the hours of one and two, and between seven and eight, in the morning; and again between twelve and one, and between six and seven, in the evening. The hourly maximum pressure was at ten o'clock morning, and ten o'clock night, being, with only one exception, the uniform result for six years. The hourly minimum pressure occurred at four a.m. and four p.m., being the uniform result for six years, without any exception. The line of mean pressure was crossed four times in the twenty-four hours; and thus was realised, in the midst of atmospheric disturbances of very considerable amount, that effect, termed "horary oscillation," which was first observed by Baron Humboldt in tropical climates. Mr. Airy seemed to think, that but little more could be effected by a further continuance of these observations after the close of this year. There had been 48,000 hourly observations on the atmospheric pressure, and 87,000 hourly observations on the temperature; and he trusted these would not be preserved merely in the fragile form of MS., but placed at the disposal of the scientific world. After explaining the construction of Whewell's anemometer, he said, that when the pencil tracing the integral effect of wind moved at the rate of one-tenth of an inch per hour, the current of air at the same time moved at a mean rate of 11 feet per second. Mr. Harris had, by means of this instrument, endeavoured to arrive at something like an approximation to the velocity and direction of what he believed would amount to a trade-wind. He had a table of results which gave the mean velocity of the wind (in feet per second) for each month of the year, viz:—

Feet per second.		Feet per second.	
April	13	October	15
May	11.6 inches	November	14
June	11	December	12
July	9	January	12
August	12	February	13
September	15	March	13

So that the mean velocity of the wind during one year (leaving the direction out of the account) was about nine miles per hour. If the mean velocities arrived at in this table were diminished and made proportionate to the whole length of the wind, we should then have something like a general idea of the velocity of the aerial current, as deduced from observation and inquiry. Then, according to Mr. Whewell's method of taking the observations (which he was persuaded was the only true method), in the latitude of Plymouth they had something like a trade-wind, setting in from southerly to northerly points of the compass at a mean velocity of four and a half to six miles in the hour. This was something like a definite result in meteorology; for no person before had ever attempted to discover the direction and velocity of the wind in its rate per hour, setting in a given direction. In these statements he had been dealing only with mean results.

Mr. L. Howard hoped the observations would

be continued eight years longer, to complete the cycle.

The Rev. Dr. Scoresby recommended experiments to be tried upon a plane at sea, and the level of the sea, so as to avoid the resisting effect of the surface of the earth, by what he might call the attraction of the wind to the surface over which it is carried by the pressure of the atmosphere.

Col. Sykes expressed his belief that the hours of maximum and minimum mean pressure, at Plymouth, were nearly, if not absolutely, identical with those observed in India, 2000 feet, and those observed by Humboldt on the plains of Mexico 10,000 feet, above the level of the sea.

Col. Sabine, in reference to meteorological observations, said, a letter had been received that morning by the committee of the Section from Prof. Wheatstone, containing a proposal on his part to make, for the use of the Association, at their observatory at Kew, an apparatus which should record the operations of all meteorological instruments whatever. One result of this would be an important saving of cost to the Association in the employment of a great number of observers in various parts of the world. Amongst the instruments forming this set of apparatus was one for measuring the force and direction of the wind; which instrument might be sent up to different heights by captive balloons, secured at the required altitudes; and thus, at a small expense, might be measured the variations of the wind at different heights above the surface, within 8000 or 10,000 feet. The letter stated that the chief obstacle to the important course of multiplying the stations for making meteorological observations was the necessity for a constant attendance of observers (now generally required night and day); and as the attempts to make self-recording barometers and thermometers by mechanical means had hitherto failed, it occurred to Prof. Wheatstone that the principle he employed in his electro-magnetic telegraph, viz. the determination of the feeble electric current by the mere contact of the mercury in the tube with a fine platina wire, might overcome the difficulty, and a material recorder might be made to register every half-hour the varying indications of the barometer, the thermometer, and the synchrometer (he, Col. Sabine, might add the anemometer), as accurately as the most careful observer would be able to do, and requiring only a few minutes' attention each day to put it into order for the 24 hours. Such an instrument should be constructed under his directions for the Richmond observatory; and if it were found to succeed, a great impediment to the cultivation of meteorology would be no more; for persons in almost every locality might be found who would not object to devote a few minutes every day to it, but who found it impossible to make hourly or half-hourly observations for themselves. Col. Sabine added, that the committee of the Section had forwarded a recommendation to the committee of recommendations that such apparatus might be prepared and sent to the observatory. (A grant of 50*l.* was voted.)

5. This report, requested at the meeting at Newcastle, was not forthcoming; and Col. Sabine explained the causes of delay.

Prof. Bache had proffered co-operation in the universal meteorological inquiry; but, failing in funds, had applied to the government of the United States for pecuniary assistance. This was refused; and Colonel Sabine was glad to say that this refusal was a solitary case: every other government to whom appli-

cation for co-operation had been made readily assisted. Professor Bache then had tried private subscription, and had obtained funds. He then requested the government to permit him to employ military men to record observations, &c., their habits of discipline rendering such men most fit for this service. This last application was likewise refused; and thus had Prof. Bache been thrown back on himself; but he still hoped soon to forward the report.

We cannot refrain here from pointing out the contrast of the reality of the acts of the American government with reference to scientific inquiry of a national character and for universal benefit, with the spirit of the speech of their representative as delivered at the Association-dinner on Saturday (see page 515).

6. Mr. Nasmyth inferred from the extreme parallelism, in fine settled weather, of the lower portion of clouds, that their formation was due to a combination of definite proportions. He considered each stratum of atmosphere to represent a definite chemical combination of—for instance, arbitrarily, 1 part water to 3000 of air; the next stratum 1 to 4000, and so on, and each assuming a peculiar form. The portions of watery vapour excluded from combination in the higher and less dense strata were thrust down, until they met with the resistance of the next stratum of greater density, and so on. The rugged portions of the lower stratum in wet weather were the surplusage of combination, the portions shut out, and which ever exhibited themselves as haze, fog, or rain. Any violent changes or combinations in these definite proportions, from electrical causes, ever produced heavy rains. This idea had occupied Mr. Nasmyth's mind, and had been the subject of observation for six years; he threw it out for the notice of meteorologists. To say the least of it, it seems original, and is ingenious.

7. Mr. Hopkins was interrupted by the assembling of the General Committee. His paper was again brought forward on Wednesday.

#### SECTION B.

Dr. Kane, Dublin, in the chair.

1. Mr. John Davies, "Some considerations connected with Manufacture and Purification of Gases obtained from Coal."

2. Professor Bunsen, "On some new Compounds of Kakodyl."

3. Dr. Bromels, "On the Formation of Cyanuret of Potassium in Blast-Furnaces."

4. Mr. Leigh, "On a new Product obtained from Coal Naphtha."

5. Dr. Bromels, "On Compounds of Carbon and Iron."

6. Mr. Richardson, "Contribution towards the History of Magnesians Limestone."

1. Mr. Davies observed, that the aëriform matter obtained by the distillation of coal is of a mixed character; and that, of the various gases evolved in the operation, two of them in particular are unfitted for their intended purpose,—carbonic acid being neither a combustible body nor a supporter of combustion; while sulphuretted hydrogen, or hydro-sulphuric acid, has not only an offensive odour, but is in other important particulars objectionable. Both these gases have an affinity for lime, which has therefore been successfully applied in either the dry or moist state to remove these injurious substances. In addition to the gases, strictly so called, an oily matter, in the form of vapour, mingles with the other aëriform matter, and appears to augment very greatly the illuminating power. The ordinary mode of purification has a tendency to remove this valuable constituent. Sufficient attention has hardly been paid in gas-establishments to the nature and qualities of the coal; for if, as in many cases,

the coal contains a considerable proportion of a sulphuret, it will be sure to generate in consequence a large quantity of hydro-sulphuric acid. This would be materially obviated by the selection of a species of coal of a different quality from that usually employed. An estimate of the presence and relative quantity of the sulphur is of great importance in the manufacture of gas, and still greater in that of iron. That the extensive purification required, when a considerable quantity of hydro-sulphuric acid is present, impoverishes the gas, and impairs its illuminating powers, has been ably shewn by Dr. Ure. Mr. Davies said, he could confirm the statement by some researches of his own made several years ago. Dr. Ure found, in a specimen of coal-gas, as delivered from the retorts of one of the metropolitan companies, no less than 18 per cent of olefant gas; while in the same gas, after being passed through the purifiers, there remained only 11 per cent of that richly illuminating gas. By using a gas-coal nearly free from sulphur, he thinks it probable that 10 per cent more of light might be realised than with the common more sulphurous coal. This shewed the advantage of placing over gas-establishments persons acquainted with chemistry. The presence of ammonia in coal-gas, after the ordinary process of purification, seems until lately to have escaped notice. Mr. Davies had determined experimentally the efficiency of the patent process of Mr. Phillips for its removal, and proceeded to explain his method, from which two facts may be inferred: first, that the ordinary method of purification leaves ammonia in the gas; and secondly, that the ammonia so left may be completely removed by washing the gas with a solution of alum. The mode of procedure was to pass the gas through an extra chamber containing a solution of alum. More alum is added when requisite. In order to divide the gas, so as to expose as great a surface as possible to the action of the purifying liquid, a quantity of broom was immersed in the solution. In the course of a day or two, the bottom of the purifier becomes covered with a considerable quantity of alumina, shewing that no ordinary portion of ammonia must have been abstracted. The presence of ammonia in coal-gas is an interesting subject of inquiry, upon which Mr. D. offered some conjectures, but could not explain. A conversation ensued, without offering any practical results.

2. Mr. Croft read the paper by Prof. Bunsen, "On kakodylic acid, and the sulphurets of kakodyl." The professor laid before the last meeting of the Association, at Plymouth, the results of a tedious and dangerous series of researches, by which he proved, that the radical of the kakodyl compounds can not only be separated out of its compounds, but that it also possesses the property, in common and in a precisely similar manner with the simple metals, of combining directly with other bodies. The professor had now directed his attention to the higher compounds of the radical, and had arrived at results no less interesting, and which stood in exact opposition to the views which the new French school of chemistry were endeavouring to introduce. The production of kakodylic acid depends upon one of the most uncommon phenomena of organic chemistry. It is formed by the direct oxidation of the radical or of its protoxide. The behaviour of this radical is in exact contradiction to the premises of Dumas's theory of substitution, and is perfectly similar to that of a simple metal, which, when exposed to the influence of oxygen, runs through all the inter-



mediate steps of oxidation until it reaches the highest. The preparation of kakodylic acid by direct oxidation of the oxide is rendered both disagreeable and dangerous by the great inflammability of this substance, and by its stupefying odour. Prof. Bunsen had therefore discovered a simple method of preparation, and oxide of mercury is extremely well suited for the purpose; for, when this substance is digested under water with oxide of kakodyl, it converts the whole of it in a few seconds into kakodylic acid, which may be purified by a single recrystallisation out of alcohol. The professor proceeded to describe the acid and some of its properties, and also the sulphurets of kakodyl. The results of his researches proved satisfactorily the great similarity existing between kakodyl and certain metals.

3. Mr. E. Schunk read the paper by Dr. Bromeis, of Cassel. During a visit to the Hartz mountains, the doctor was shewn a mass impregnated with salts, which had been found in considerable quantity on an iron slag at the bottom of a blast-furnace. He undertook a chemical investigation of the constituents of this mass. After maceration and evaporation, a saline mass remained, which, on being broken, gave out a strong smell of ammonia. The doctor proceeded to describe his investigation, the result of which seemed to be, that the formation of cyanogen had taken place thus:—the nitrogen of the air, being exposed to a great pressure and high temperature, combined directly with the carbon of the carburet of potassium, forming cyanogen and cyanuret of potassium.

4. Mr. Leigh read a communication on a new product obtained from coal naphtha, the crystals of which, now brought under the notice of the Section, have much analogy with the oil (like that of bitter almonds) obtained at the same time with them. The oil, when extensively exposed to the action of oxygen, becomes a crystalline, solid, having much the same appearance as these crystals. It is probable the crystals only differ from the oil in containing a greater quantity of oxygen.

5. Mr. E. Schunk read a paper by Dr. Bromeis, of Cassel, "On the compounds of carbon and iron, and the determination of carbon in cast-iron, steel, and wrought-iron. The question—what is the chemical connexion which exists between carbon and iron, or what part does the carbon play in the various kinds of iron, as cast-iron, steel, and wrought-iron?—has long remained in hypothetical obscurity. The questions which Dr. Bromeis, after many experiments, considered he had done something to determine, were—firstly, Does cast-iron constitute or contain a polycarburet of iron? and does the most perfect white cast-iron represent this compound in its purest state? Secondly, What difference is there between cast-iron, steel, and wrought-iron? and why is no carbon separated out of cast-steel, on allowing the latter, when in a state of fusion, slowly to cool, whilst cast-iron, containing almost the same quantity of carbon, gives rise to this phenomenon? The answer to the first question is, that neither common cast-iron nor white cast-iron is a polycarburet of iron of determinate constitution. The answer to the second question is too long to be given; but, according to the writer's view, grey cast-iron must be considered as a mixture of very impure cast-steel with carbon. This may be one cause why grey cast-iron may be so easily hardened on the surface. If, lastly, we compare wrought-iron with steel, we shall be unable to find a limit between the two, if we are unwilling to place

it at a per centage of 0.5 of carbon. Though numerous analyses are still requisite, in order to settle this question, so important for the theory of iron-smelting, still Dr. Bromeis thought he had succeeded in pointing out the importance of quantitatively separating and determining the carbon chemically united with the iron, and that only mechanically combined.

6. Mr. Richardson's "Contributions towards the history of the magnesian limestone" was next read by Mr. Croft. It is of some consequence to the farmer to know the nature of his limestones; for, should he add too great a proportion of this latter, he may seriously injure his land. It is well known, that magnesia does not absorb carbonic acid from the air so rapidly as lime, and there is consequently a greater probability of its combining with the organic acids of the soil, and thus entering into the circulation of the plant in too great a proportion to be beneficial. The method of analysis was then described at length. The insoluble residue in every case contained some organic matter. The analyses were collected together in a tabular form.—Adjourned at one o'clock.

#### SECTION C.

1. Mr. Binney, "On the Lancashire Coal-field."
2. Mr. Brodie, "On the Discovery of Insects in the Lias of Gloucestershire."
3. Mr. J. Travis Clay, "On the occurrence of Boulders in the Valley of the Calder."
4. Mr. J. Dawes, "On the occurrence of Vegetable Remains (supposed to be marine) in the New Red Sandstone of Staffordshire."
5. Mr. Hawkshaw, "On Fossil Footsteps in the New Red Sandstone at Lymn, Cheshire."
6. Mr. King, "On the Geography of the North-West Coast of America."
7. Rev. D. Williams, "On Volcanic Rocks in the West of England."

1. Mr. Binney's practical description of the Lancashire coal-field was a paper not only of great local but great general interest. This carboniferous deposit occupies the chief part of the southern division of that county, and extends into Chester, Derby, and Yorkshire. In a line from near Macclesfield to Colne, it ranges about 46 miles due north and south, and from Tarbock to Todmorden, about forty miles from west-south-west to east-north-east. It commences with the lower millstone grit, and extends upwards into the limestones of Ardwick, near Manchester, now generally considered to be the highest portion of the coal-measures hitherto observed in England. It may be conveniently divided into three divisions, namely (in the descending order),—1st, the Manchester coal-field, containing the limestones of Ardwick, and the coals found in the isolated patch of coal-measures at Clayton and Bradford, near Manchester, and occupying the low tract of country adjoining the new red sandstone plains. 2d, the middle field, comprising the thick coals of Poynton, Bredbury, Haughton, Ashton, Oldham, Middleton, Bury, Radcliffe, Clifton, Worsley, Wigan, and St. Helen's, occupying the rising ground between the new red sandstone plains and the higher parts of the country, and containing the richest portion of the field. 3d, the lower coals found in the higher parts of the country, along the sides of the Penine chain, and the moorlands of the northern parts of Lancashire; comprising those of Whaley Bridge, Mellor, Glossop, Lees, Crompton, Rochdale, Todmorden, Bacup, Burnley, Colne, Haslingden, Blackburn, and Chorley, seams of no great thickness, but valuable from their quality and position, and remarkable from their adjoining shale, containing remains of the *pecten*, *goniatites*, *posidonia*, and other shells of decided marine origin. The total thickness of the coal-measures varies in different parts of the field. In a line from

Manchester, through Ashton, Staley bridge, Mottram, to the limestone shales of Hollin Brook, it is about 2000 yards in thickness, and contains 75 beds of coals, containing altogether 150 feet: all these seams exceed one foot in thickness. In a line through Worsley, Clifton, Radcliffe, Bury, Bacup, Burnley, to the limestone shales of Pendle Hill, Mr. B. had found 36 seams, containing altogether 93 feet of coal; only 10 of these seams are under a foot. In both sections, a great number of smaller seams are not included in the list of coals. With regard to the roofs of coals (the strata immediately overlying the coals), the seams of coals, and the floors of coals (the strata immediately underlying them);—first, the roofs are of four kinds: 1. A fine mixture of alumina and silica, with oxide of iron, and a slight trace of the carbonates of iron and lime, generally known by the name of blue-bind. 2. Sandstone. 3. Black shale. 4. Bituminous schists, provincially known by the name of "black basses." All these deposits vary at different places, even over the same coal; but the deposits themselves generally contain the same kind of fossils. The blue-binds are the most frequent, and nearly always contain remains of ferns and other coal-plants, stigmairia, lepidodendra, ulodendra, and sigillaria, and beds of the unio and other shells; the three last-named plants (especially the sigillaria) being often found standing erect at right angles to the planes of stratification. The upper part of the field does not afford many erect specimens, the middle portion being their chief places of occurrence: the Albert and Duchess of Lancaster mines, at Pendleton; the small coals (lying under the seven-feet mine), at Dixon Fold, on the line of the Bolton Railway; the five-feet coal, at Little Lever; the Bent mines of Alkrington and Oldham; the four-feet King and Arley mines of Wigan, all in the middle division of the coal-field; and the foot-coal in the lower division at Quanton,—yield them. Sometimes they are found with their roots running into and resting on the seam, and more frequently the bole of the tree resting on the coal itself, without any traces of roots appearing. The sigillariae are by far the most common. He had only observed the lepidodendron at Dixon Fold; and the ulodendron at Standish, near Wigan. The sigillariae in the Duchess of Lancaster mine at Pendleton, and the small coal at Dixon Fold, afford them as abundantly as they could possibly have grown. In the first-named place were three specimens of 24 feet high, and about 3 feet 2 inches in circumference, standing in a shaft of 11 feet diameter; and the whole of the mine affords them in great abundance. At Dixon Fold the trees are nearly as numerous. Roofs of sandstone are not very common; but where they do occur, the seams of coal are generally of inferior quality: the fossils which are found in them are, for the most part, prostrate coal-plants, sigillariae, stigmairia, and lepidodendra. Black shale roofs are of frequent occurrence, and cover most of our best house-fire and caking-coals. They seldom contain remains of plants; but there have been one or two instances in which upright sigillariae have been found. Bivalve shells occur in several. Detached scales and teeth of fishes are found in nearly all of them; and over the black mine in Dukinfield, Mr. Knowles's coal, at Long Lane, Bolton, the microconchus *carbonarius* has been met with. Nearly all the black shales lying over the coals in the lower field teem with remains of the *pecten*, *goniatites*, and *posidonia*, and detached

scales and bones of fishes. Shales with highly bituminous schists are not of frequent occurrence. They are found over the Black mine at Peel, and the four-feet mine of Pendleton, both containing an abundance of the remains of fishes, for the most part entire. At both these places, neither the remains of cypris or microconchus are met with. In the roofs of the yard-and-three-quarters mines of Bradford, and the roof of the thin coal found between the Ardwick limestones, the highest coal in the series in the three black "bass" roofs, all the remains of fishes consist of detached teeth, bones, and scales, mingled amidst countless myriads of the remains of cypris and microconchus. As to the variability of the nature of the roof, with the organic remains it contains, that of the feather-edge coal at Birtle Dean, near Heywood, the lowest mine hitherto found worth working in the field, is about a yard in thickness, full of shells of the genera *pecten*, *goniatites*, and *posidonia*, mixed with various ferns, lepidodendra, sigillariae, calamities, and other coal-plants; while at Walmsley, within two miles of Birtle Dean, the same coal is found embedded in a very coarse grit-stone rock, composed of quartz and water-worn garnets. The seams of coal may be classed into two kinds—viz. the cubical, or those whose cross cleat runs at right angles to the main cleat; and the rhomboidal, or those whose cross cleat makes an acute angle with the main cleat. The first named generally occur in the upper and lower portions of the field, while the latter are found chiefly in the middle. In most cases the main cleat of the coal runs parallel to the line of the chief fault in the neighbourhood. The beds of cannel are generally found on the top of the coal, and nearly always contain remains of fishes, often entire bivalve shells; but no traces of the cypris or microconchus have as yet been met with; rarely any leaves or stems of plants; while the upper portions of the coal-seams frequently exhibit decided tracts of plants, chiefly sigillariae, stigmaria, lepidodendra, and calamities; and the lower parts, isolated patches of pulverulent carbonaceous matter, displaying fibrous structure, but no remains of fishes or shells. In one instance, at the new pit of the Pendleton Coal Company, in the six-feet seam, several rounded stones of a fine silicious grit were found in the coal; but as they occurred near to a very great fault of 1000 yards, it is probably doubtful whether they had not fallen into some of the crevices formed during the great dislocation of the strata there. Having noticed the fact that some seams of coal continued undivided over large tracts of country, while others divided into several seams, the report went on to describe the character of the stratum on which the coal rests, generally known by the name of floor. This deposit is always carefully noticed by practical miners, who believe, that where a thin seam is found on a good thick argillaceous floor full of stigmaria, it is certain to become, if followed, a workable coal. These floors are of three kinds—the fire-clay, the warrant (a clay mixed with a larger amount of silica), and the rock floors. The first are the most abundant, the second frequent, and the last only found in two instances, viz. the feather-edge coal at Walmsley and Fecit, having a rough quartzose sandstone, and the gannister, lately noticed. The last-named is merely a fine-grained admixture of silica and alumina, varying from eight inches to two feet in thickness, always graduating into a fine fire-clay at its bottom. All the seams, with the exception of the feather-edge coal,

yield the stigmaria *fecoides* in their floors. The plant generally has its leaves attached to it; and in all the instances of true floors (those at the bottom of the seam), it occurs without any other coal-plants being mixed with it. This absence of other plants, and the constant characters of the floors, seem to indicate that all these numerous deposits were formed nearly under similar conditions. Their constituents shew that they have been suspended in water, and very quietly deposited from that medium. In conjunction with Mr. B., Mr. J. E. Bowman had examined several specimens of the floors under the microscope, but had not yet detected any of the silicious coverings of infusoria which had been found so abundantly in the muddy deposits of our present rivers and estuaries by Prof. Ehrenberg. Mr. J. Leigh had kindly assisted him in examining the chemical composition of coal-floors; and from the specimens examined, they appear to consist of—silica, 54; alumina, 38; oxide of iron, 1; water, 7; total, 100;—a strong clay-soil, well calculated for the growth of the vast mass of vegetable matter required for the formation of our seams of coal. The absence of alkalies from the deposits is what might be expected from the exhausting properties of plants, and seems to strengthen the supposition that they have afforded nourishment to luxuriant crops of vegetation now forming coal. The presence of the remains of bivalve shells and fishes in cannel beds satisfactorily proves that they were formed under water; but in the Lancashire coal-field we have as yet found no remains either of fishes or shells in the seams of coal; nor is there any indication, either by the admixture of sand or silt in them, to shew that they were drifted into the places where they are now found by a rapid current of water. In most cases, we have seen that both the floors and roofs give no evidence of very strong currents of water. The occurrence of forests of large trees standing upright on the coals, the pure vegetable matter of the coals themselves, with scarce any admixture of foreign ingredients, found lying upon a rich alluvial deposit of silt, apparently well adapted for the production of luxuriant crops of vegetation, seem to prove that the vegetable matter forming coal (in most cases) grew upon the spots where it is now found; whilst the splitting and alteration in the thicknesses of the coals themselves shew that the surface of the earth was most probably at that remote age subject to frequent subsidences.

Mr. Williamson explained the views of his paper on Saturday; and a discussion of considerable length ensued—Dr. Buckland, Sir II. de la Beche, Mr. Logan, Mr. Griffith, Mr. Phillips, Dr. Fleming, and Mr. Sedgwick, all concurring heartily in the facts and opinions of Mr. Binney. *Inter alia*, Dr. Fleming stated that he had seen, in the Shetland Islands, a peat resting on sea-gravel, and that covered again by a marine deposit. A lake had been formed there by the sea throwing up a great quantity of sand; the rivulets in the neighbourhood covering this with mud, stopped, as an engineer said, the pores of the filter, and formed a lake. Again, the sea brought in a quantity of gravel, and made a marine deposit over the lacustrine deposit. In Aberdeenshire there was a lake in the progress of enlarging its boundaries at the present moment, by a somewhat similar process. A quantity of drift sea-sand formed a barrier parallel with the coast; in the interior there was a very strong clay soil, and that having yielded to the action of the rain, suitable materials were produced

for stopping up the pores of the sand, so that now the bed of a lake was formed, which was rising three or four feet each year, and would probably rise 100 feet before it got an outlet to the sea. There was also a filling-up of the interior by a numerous series of fresh-water plants. From the bay of Aberdeen, after a very severe storm, or, as the fishermen termed it, a ground or "grund storm," a mass of solid peat, not unlike cannel coal, but not mineralised to the same extent, was thrown up. This seemed to have been formed from the vegetable matter carried down into the bay from the Dee and the Don. In that mass of peat he had found the leaves of the oak and thorn along with certain marine productions.

Mr. Williamson having briefly addressed the Section in reply, the Marquis of Northampton said, Dr. Fleming would render essential service to geology, if he would draw up a systematic summary of what he had observed going on in the formation of peat, and lay that summary before the British Association at its next meeting, or before the Geological Society.

2. Mr. Brodie expressed his desire to offer a brief statement of a discovery lately made of the remains of insects in the lower beds of the lias formation in Gloucestershire. Such fossils being comparatively of great variety, and, with one exception, not having been before discovered in the lias, he was unwilling to delay any notice of the occurrence of these organic remains in the lowest members of our oolitic series. His former discovery of insects in the Wealden led him to a closer investigation of the strata in the neighbourhood of Gloucester; and the result had proved highly satisfactory. He had already detected elytra of one or more genera of coleoptera; and one or two wings of some insects which resembled that of the libellula. The above fossils are generally of small size: the largest elytrum is a little more than half an inch long, and the largest wing about an inch in length. Nor are they by any means abundant. The beds in which they occur consist of thin courses, blue, green, and white limestone forming some of the lower beds of the lias formations, so extensively developed in the neighbourhood of Cheltenham and Gloucester.

3. The next communication was made by Mr. J. Travis Clay, "On the occurrence of boulders in the Valley of the Calder." The writer is continuing his investigations on the diluvial phenomena of the south parts of Yorkshire, and hopes to bring them to bear on the glacier theory.

4. Mr. J. Dawes read a short paper, to communicate the fact that vegetable remains, probably marine, occur in strata in which they had not hitherto been noticed—between Birmingham and the collieries near Tipton, through Gravely Hill, Perry, and Great Barr.

5. Mr. Hawkshaw read a notice of the fossil footprints in the new red sandstone at Lymn, in Cheshire. His object in doing so was merely to record another instance of those extraordinary impressions of footmarks which had lately excited so much interest among geologists. After describing minutely the Lymn quarry, in which the footprints of the *Cheirotherium labyrinthodon* are found, he entered into some curious speculations regarding the nature of that inhabitant of the earlier ages of this world. The footmarks were from seven to nine inches; the forefoot small, and a larger one behind. It was evident, from the traces left, that they were covered with a rough skin.

6, 7, 8. Mr. R. King brought forward a lengthened paper "On the geography of the

northern coast of America;" but, owing to the lateness of the hour, he was unable to read it through, and therefore briefly stated, that the discovery of the north-west passage was not made because practicable measures had not been adopted. He contended, that the only practicable mode of exploring the polar coasts was by boats, and not ships; and that the way of the Great Fish-river was the only way that could be taken with any prospect of success.

The Rev. D. Williams read a short paper "On the volcanic rocks of the West of England;" and Mr. E. Hall a communication "On the geology of Derbyshire and Yorkshire," which lasted an hour after the usual time of concluding—3 o'clock.

## SECTION D.

1. Mr. Webb Hall, "On the Means of Promoting the Growth of Plants."

2. Dr. Playfair, "Liebig's Report on Chemistry as applied to Physiology."

3. Rev. J. B. Reade, "On the Fallacies of Liebig's Theory of Fallows."

4. Mr. E. Solly, jun., "to exhibit Specimens of the Diseased Bark of living Ash-Trees occasioned by Insects."

5. Dr. Danbush, "On an Irregular Production of Flowers in an Aloe at Ham Court, near Bristol."

The titles of most of these papers indicate that the proceedings of this day might have belonged to an agricultural section. Liebig's volume has already been fully and carefully analysed in the *Literary Gazette*; and we are not in possession of Mr. Webb Hall's views.

## SECTION E. Saturday.

The Medical Section was spoken of at the close of the meeting as having been more interesting in its proceedings than it had been of late years; but still most of the matters brought forward and discussed are fitter for medical publications than for popular journals. With the exceptions of the brief notices which will be found in our preceding pages, 440, 456, and 482, we have accordingly left this branch of the Association untouched; and shall only, here, allude very cursorily to the whole of its sittings. Having already stated the papers, &c. for Thursday and Friday, we come to those of Saturday, viz.:

1. Dr. Bardsley, "Observations on a Monstrous Child, which lived for several years."

2. Mr. Catlow, "On the Statistics of Deaths and Births of Infants under two years."

3. Mr. John Robertson, "On the Period of Puberty in Negro Women."

4. Mr. Robert Chambers, "On a Mode of Ventilation lately adopted in Glasgow."

After Mr. Bardsley's "Observations on the monstrous child," Mr. Catlow's paper led to a discussion on several points of human physiology connected with the reproduction of the species, in the course of which were mentioned instances of the similitude of children born of a second marriage to a former husband; and it was stated, that instances had been observed in the colonies in which a white woman, having been first married to a black man, and having had children by him, which were naturally half-colour, had, after the first husband's death, been married to a white man, and among the white children of the second marriage she had one child of the same colour as the children of the first marriage.

3. Mr. John Robertson's paper went to shew, that the commonly received notion, that in hot climates maturity was earlier than in temperate and cold climates, was a mere vulgar error. An animated discussion ensued. Mr. Robertson stated as his hypothesis, that early marriages and early development are found in barbarous states of society in all countries, and that they varied with the civilisation. This he did not

appear to establish on any satisfactory grounds, and farther data were generally demanded.

4. Mr. Robert Chambers, of Glasgow, read the abstract of an account of a mode of ventilation lately adopted in that city.

## SECTION E. Monday.

1. Dr. Laycock, "On a General Law of Vital Periodicity."

2. Dr. Clay, "Remarks on the Pathology and Treatment of Diabetes."

Dr. Laycock's paper, read by Dr. Sargent, secretary, was a very long one, and contained a vast mass of facts confirmatory of periodicity, not only in diseases, but in sound health; and not only in man, but in the lower order of animals. Such facts had been noticed very particularly by the ancient writers on medicine, Hippocrates, Celsus, &c., which led to the establishment of critical days in the treatment of various diseases, often rendering their prognostications very certain; indeed, Dr. L. stated that in many instances certain periodic changes took place in health as well as disease, establishing the same law—that he felt little doubt that the time of birth had reference to the time of death. The views of this paper coincided very much with what had been promulgated by Mr. P. Catlow the day before, and were apparently adopted with slight reservations by the Section. The second paper does not come within our scope.

## SECTION E. Tuesday.

1. Mr. Wilson, "On Lithotomy and Lithotripsy."

2. Professor Owen, "On Dr. Martin Barry's Microscopical Researches on Fibre."

3. Dr. Carson, "On the Uses of the Muscular Fibres of the Bronchial Tubes."

4. Dr. Carson, "On a Case of unusual Paralysis."

5. Dr. Richardson, "On a Case of Asphyxia."

6. Mr. Clay, "On the Use of Pessaries."

In the first paper Mr. Wilson, a gentleman of much practice in Manchester, entered at length into the statistical success of the two operations; and in speaking of their comparative value, preferred the old operation in children, but fully approved of lithotomy in the adult, if not pushed too near old age, and avoiding very irritable constitutions.

Owing to the number of papers on this (the last) day, no discussions were allowed; and the Section was very thinly attended.

2. Prof. Owen's communication referred to a memoir by Dr. Martin Barry, recently published in the *Transactions of the Royal Society*. In the red-blood disc, in muscle, in nerve, and in other tissues, Dr. Barry has represented filaments having a flat, grooved, and compound form, such as would be produced by two spiral threads running in opposite directions, and interlacing. In some instances it is possible to see that this really is the structure of the muscular fibril; and Dr. Barry shewed to Prof. Owen, and to others who were present, a muscular fibril so composed, the two spiral threads of which were separated at the end, where the fibril had been broken off. When the fasciculus in voluntary muscle breaks off short, or becomes notched, Dr. Barry states, that it is from the presence of large interlaced spirals, which surround minute bundles of fibrillæ, and necessitate a fracture directly across the fasciculus. These large spirals produce transverse striæ. They may be represented by the fingers of the two hands, when made to alternate with one another, and viewed on the extensor side. This state of the fasciculus is well seen in muscle from the leg of the boiled lobster. The membrane investing the fasciculus is formed of coalesced spirals. Transverse striæ are sometimes produced by the fibrillæ themselves, being rows of spaces between the curves of their spiral threads. It appears to have been these

minute curves of spiral threads that misled observers into the belief that the muscular fibril had a beaded structure. In nerves it is by no means difficult to discern, not only that the "white substance" consists of filaments, but that filaments are present having the remarkable appearance above mentioned. Fibres, according to Dr. Barry's observations, is reproduced by self-division, and spirals coalesce into a membranous form; in undergoing which changes, either all trace of the structure in question is lost, or the only part of it discernible is a dark central line. The nature of the blood-corpuscle, and its uses in the economy, Prof. Owen stated to have been explained by Dr. Barry. He announced the important fact, that in this corpuscle there is formed a filament, such as that which he finds in all the tissues of the body. Prof. Owen himself had had many opportunities of seeing these filaments in the corpuscle of the blood. The production of filaments out of blood-corpuscles Dr. Barry finds to be the essential circumstance in the coagulation of the blood; a process attended by the evolution of red-colouring matter, and producing appearances strongly resembling some of those met with in the tissues.

Dr. Carson then read his paper "On the uses of the muscular fibres of the bronchial tubes;" and afterwards introduced a case to the meeting of paralysis in the serratus magnus. Dr. Richardson then briefly related his case of asphyxia, in which the recovery took place after a very considerable lapse of time; and Dr. Clay read his paper, entitled, "The evils arising from the use of common pessaries;" with which the proceedings of the Medical Section terminated. Not a word about medical reform was uttered.

## SECTION F.—Monday.

1. Mr. Henry Ashworth, "On the Increase of Property in South Lancashire since the Revolution."

2. Rev. Mr. Jones, "On the Statistics of French Commerce in 1840."

3. Dr. Ashton, "On Vital Statistics, with Remarks on the Influence which the Atmosphere exerts over the Rate of Mortality."

4. Mr. Henry Woolcombe, "On the Statistics of Plymouth."

5. Mr. Gardiner, "On the Industrial and Training-School about to be erected in the neighbourhood of Manchester."

1. Mr. Henry Ashworth's paper consisted of a series of statistical illustrations of the past and present state of Lancashire, more particularly relating to the hundred of Salford. Commencing with the reign of William the Conqueror, and proceeding downward to the present day, he gave a brief general sketch of the astonishing progress which Lancashire had made in wealth and population during that period. In shewing the improvement which had taken place, however, so far as the precise statistics of the subject were concerned, he only went as far back as the end of the seventeenth century, as he had not been able to find any earlier data of a sufficiently extensive character. The figures on which he proposed to found a comparison of the past and present state of Lancashire, were taken from a parliamentary return of the assessment for the land-tax in 1692, and the authorised statements of the county assessment for 1841. In shewing the progress of population, he was obliged to confine himself to a much more limited period, as he had no returns of the population of an earlier date than 1801. In estimating the assessment value of property in 1692, he multiplied the gross amount of the land-tax, which was then 4s. in the pound, by five; and this, he considered, gave a very close approximation to the real annual value of the property in the county at that period. As an illustration of



what he meant, let them take the township of Great Bolton. The total amount of land-tax in that township, redeemed and unredeemed, was 33l. 16s.; which sum, multiplied by five, gave the sum of 169l., as the full value of that township in 1692. In 1841, the annual value of the same township, as rated to the county assessment, was 93,916l.; shewing an increase of value, within that period, of 54,300 per cent. By way of enlarged illustration, let them extend the same comparison to the several hundreds of Lancashire:

	Value in 1692.	Value in 1841.	Inc. per cent.
Lonsdale . . .	£28,500	£301,987	3,500
Amounderness . .	10,288	364,454	3,500
Leyland . . .	5,774	199,868	3,500
Blackburn . . .	11,131	497,541	4,400
Salford . . .	23,907	2,703,292	10,400
West Derby . . .	35,642	2,124,925	5,900
	£97,242	£6,192,067	6,300

It would be seen from this table, that in the course of 150 years the annual assessed value of the three hundreds which are principally engaged in agriculture,—Lonsdale, Amounderness, and Leyland,—had increased thirty-five-fold, or 3500 per cent; while the other three hundreds into which this county is divided, had increased in value 7000 per cent, which was double the increase that had taken place in the agricultural portion of the county. In many of the separate towns and townships the increase was still more remarkable, of which he gave extraordinary instances. From which it would be seen, that manufacturing industry had not only promoted the prosperity of the places in which it was developed, but that it had extended its benefits to the whole surrounding district, raising the rental of mere land in some instances 1500, and in others 3000 per cent. One instance among many was to be found in Chorlton-upon-Medlock, in this neighbourhood. In the year 1590 the Chorlton Hall estate, extending over most of the township, was sold by Edmund Trafford, Esq. to Ralph Sorocold for the sum of 320l. In 1344 the same estate was sold to Thomas Minshull, apothecary, for 300l.; and in 1794, twenty years after the introduction of the cotton manufacture, it was sold for 70,000l. With regard to the increase of population the progress was not so wonderful, because the period which the comparison embraced was more limited; yet still it was far beyond what had taken place in any other county in England. In 1801 the population of Lancashire was 672,565. The natural increase of that number of inhabitants, at the rate of 14 per cent in ten years, which is about the average of the kingdom, would, in 1841, have reached 1,135,934. The real number, as shewn by the census, was 1,667,061; so that, if we deducted the supposed natural increase from that amount, it would be found, that within the last forty years 531,130 persons must have immigrated to this county from other districts in search of employment. This was followed by a list of twenty townships, in which the population had decreased on the aggregate from 14,273 to 12,536, or about 12 per cent between 1831 and 1841. Mr. Ashworth concluded his interesting paper by some just remarks on the critical circumstances in which the industrial classes of Lancashire, notwithstanding all their energy, perseverance, and skill, are placed at the present moment. A short period would now probably determine whether our manufacturing industry should continue to exalt the British name, or speedily depart to a more favourable soil; whether that noble spirit of our people, which had overcome so many obstacles, should at length be broken

down, and yield itself up to pauperism; or whether it yet possessed elasticity enough to overcome the crisis.

2. Rev. Mr. H. L. Jones's paper, on the commerce of France in 1840, was read by Mr. James Heywood. It appeared that the total amount in value of the trade (exports and imports included) of France during 1840 was greater than in any previous year, and reached the sum of 2063 millions of francs. In 1826 the total trade (exports and imports included) was 1126 millions; in 1836, 1876 millions; and in 1839, 1950 millions: thus giving an increase for 1840 of 113 millions. The principal increase was in the imports, which at no former period had exceeded 1000 millions; but in this year they amounted to 1052. The exports exceeded those of 1839 by only eight millions. What is termed the special commerce of France (that is to say, the products of her own soil or manufactures exported, and the articles imported for her own consumption) amounted to 1442 millions out of the 2063 millions; being—

Imports . . .	747 millions.
Exports . . .	695 millions.

Out of the total trade for 1840, the exports and imports by sea amounted to 1481 millions, or about 71½ per cent; and those by land to 582 millions, or about 28½ per cent. The United States had the greatest share of the imports into France, since they amounted to 176 millions, or 17 per cent of the total general imports; and 118 millions, or 16 per cent on the special imports. These ciphers shew an increase of 77 per cent over 1839 for the general imports from the United States, and 37 per cent on the special imports. The general imports from England amounted to 61 millions, and the special imports to 32 millions. The increase in the import trade from the United States was principally caused by the increased demand for cotton wool—thus, in 1839 they amounted to 432,969 metrical quintals (of 221½ lb. each), but in 1840 to 790,009 metrical quintals. The increased imports from England were caused by the increased consumption of flaxen and hempen yarn, and coal. Thus the amount of yarn imported in 1835 was 12,956 quintals, but in 1840 it was 61,321; of coal, it was 70,908 tons in 1835; but 324,987 tons in 1840. The export trade to the United States fell off during 1840, being only 136 millions, instead of 204 millions as in 1839; affecting equally general and special commerce. The same result has been observed with regard to the export trade to England, which was 160 millions; being, however, only one per cent less than in 1839. The exports to Belgium, Russia, Sardinia, Brazil, and Mexico, increased during 1840; but those to Turkey, Egypt, and Switzerland, decreased. It appeared that the principal trade of France lay during 1840 with the following countries, placed in order of amounts:—United States, England, Sardinia, Switzerland, Spain, Belgium, Germany, Russia. Of these, the United States came in for 15 per cent of the whole, and England 13 per cent; while the whole of these eight nations occupied 65 per cent of the total trade of France.

Mr. G. R. Porter called attention to the large quantity of linen yarn imported into France from Great Britain in the year 1840, and remarked that this was a branch of our export-trade of but recent growth. From 1833 to the present time, the quantity of linen yarn exported from this country to France had increased so rapidly that it had begun to excite the jealousy of the French; and, as they unfortunately were inclined to be very unfriendly with this nation at present, they threatened to

double the duty on all linen yarn imported into France. By doing so, they would only reap the reward which might be expected from such unwise attempts to control trade. They would punish themselves in trying to injure us. At present they imported nineteen-twentieths of all the linen yarn that was woven in France; so that the increase of duty would certainly injure a large class of the manufacturing population of France, while it would perhaps benefit a small number of those who depended on the spinning of yarn. The increased imports of cotton yarn into France was another point which might call for a few remarks. It appeared that the cotton manufacture was making rapid strides in France; but there was nothing in all that to make us at all afraid of being outvalued in that branch of industry. It had been supposed at one time, that France and other continental nations enjoyed considerable advantages over Great Britain in regard to the cheapness of labour; but it was now ascertained that the contrary was the fact. Taking into account merely the amount of wages earned in a week, it might appear that the rate of wages in this country was higher than in France; but, taking into account the amount of labour performed for a certain sum, wages were actually lower in England than on the Continent.

3. Dr. Ashton read a paper "On vital statistics, with remarks on the influence which the atmosphere exerts over the rate of mortality." After alluding to the great diminution in the rate of mortality which had taken place in Europe within the last fifty years, he called attention to the fact, that, notwithstanding the large town-population, the average mortality of England and Wales was much lower than that of most other countries in Europe. Even in Manchester, he observed, the average number of deaths, in proportion to the population, was not so great as it was in Naples, and many other towns of which the salubrity was much praised. He entered into several statements to shew the importance of proper ventilation in dwelling-houses. It had been proved, in the most satisfactory manner, that even a small quantity of vitiated air was hurtful to health; and therefore it was not enough that a small quantity of good air should be admitted into a room where the atmosphere was loaded with any unwholesome gas. The only mode by which injury to health could be prevented was by expelling the noxious gas altogether. As an instance of the evils arising from a tainted atmosphere, he referred to the fact, that soldiers are more subject to diseases of the lungs than the rest of the population. It had been ascertained, that among soldiers, the proportion of deaths from malady amounted to 80 in every 1000; while in London the number of deaths from the same cause amounted only to 14 in every 1000. The chief cause of this superior mortality among soldiers was from their living in such crowded rooms, and breathing a tainted atmosphere. Again, comparing soldiers with sailors, it was found that on certain stations—such as the Mediterranean, for example—the mortality of the former was nearly double that of the latter.

4. Mr. Woolcombe's paper "On the statistics of Plymouth, Devonport, and Stonehouse," seemed to comprehend all the various topics of inquiry which such investigations of the population of our great towns require, in order to enable us to judge of the comparative condition of the inhabitants with other large communities; but to render these statements of any value, they must be cautiously framed, and founded upon accurate and unprejudiced in-

formation. This was apparently the case with this paper, as Mr. W. announced to the Section the sources from which he had obtained his information. Such works are more calculated for the closet than for a popular assembly, especially when the historical part has been anticipated by a previous communication to the British Association, as has been the case with this paper. We understand it will be published either in the columns of the Statistical Society of London, or as a separate publication; and in either case will be a valuable addition to the statistical information we now possess of Manchester, Glasgow, Leeds, and many other of our larger towns in the United Kingdom; and we hope every year will add to the number, until the whole are completed.

5. Mr. Ner Gardiner made a brief but interesting statement relative to the industrial and training school which the Manchester poor-law guardians are about to erect for the pauper children belonging to the three unions contained in the parish of Manchester.

#### SECTION G.

The papers on the list stood as follows:—

1. Mr. Vignoles, "On the best Form of Railway-Bars, and on the Upper Works of Railways generally."
2. Mr. Nasmyth, "On the Strength of hammered and annealed Bars of Iron and Railway-Axles."
3. Mr. Fairbairn, "On the Strength of hot and cold blast iron."
4. Mr. Hodgkinson, "On Apparatus for trying the Strength of Materials."
5. Mr. Brockedon, "On new Patent Stoppers."

Mr. Nasmyth's communication was one of much public interest, and continued the inquiry into the cause of fractured railway-axes, which had already so deeply occupied the attention of the Section. In order to illustrate that subject, Mr. N. produced some specimens of iron, all originally forming parts of the same bar, but exhibiting the effects of different modes of treatment. The most important of these were two specimens, exhibiting the effect of swaging and annealing. Mr. N. stated, that a part of the bar, after having been heated to a white heat, was swaged with a flat swage until quite cold, and, as observed, exhibited a very smooth and beautiful appearance outside, such as workmen were fond of producing, but which his experiment would prove to be exceedingly dangerous. The piece of iron thus treated was subjected to a single blow upon an anvil; and though the iron was originally tough and fibrous, as exhibited in other specimens, such was the change produced by the swaging, that it broke off at once, exhibiting a decidedly crystalline fracture. A portion of this iron was annealed, by being heated to low red heat, and suffered to cool very slowly amongst the cinders, when an attempt was made to break it; but it bore upwards of a hundred blows from a large hammer, by which it was bent into a form that proved the extreme tenacity of the iron. The result of this experiment shewed how desirable it was that railway-companies, in making their contracts for engines and carriages, should require, as an indispensable condition, that all the axles should be properly annealed after being forged; for it was quite clear that, however good and fibrous the iron might have originally been, by the workmanship to which it was subjected in the process of forging it into axles, its fibrous character might have been entirely destroyed, to the great danger of parties whose lives might be entrusted to it. In allusion to the opinion that the molecular arrangement of the particles of iron might undergo some change by the action of electricity or magnetism, whilst working in the shape of railway-axes, or in any other way in which it might be subjected to great

strain or percussion, Mr. N. said it very frequently happened, that gentlemen of great scientific acquirements came to very erroneous conclusions, from a want of that sort of knowledge which could only be obtained in the workshop; and he thought that one of the great advantages resulting from the meetings of the British Association was, that they brought scientific and practical men in personal contact; and the theories of the former received those corrections which a practical acquaintance with the ordinary processes of construction and manufacture would supply. It had been somewhat the fashion to ascribe to electricity and magnetism results which might probably be owing to very ordinary causes; and amongst them, perhaps, the attributing the crystalline texture of iron to that cause was an instance of this tendency. At the same time, he trusted that the subject would undergo strict investigation; and he thought it was one to which the funds of the Association would be very judiciously applied.

Mr. Brockedon's excellent stoppers have more than once been duly appreciated in our page.

The proceedings of the general committee meeting in the afternoon appeared in our No. 1328, p. 463; when Cork was elected for the next year's meeting, and drawings were promised of it, quite unlike the stoppers to which we have just alluded. In the evening, Sir M. I. Brunel, in a lecture, gave a description of the Thames Tunnel; and Mr. Vignoles an account of the atmospheric railway, as exhibited in action at Wormwood Scrubbs; of which, also, we have already stated the particulars from personal observation (see *Lit. Gaz.* No. 1326). In the evening there was a concert, well attended; in which a Miss Bassano and Signor Paltoni executed all the vocalism, and were much applauded.

#### PARIS LETTER.

Paris, July 15, 1842.

Academy of Sciences: sitting of July 12.

M. Renou Graves began the reading of a memoir upon aerial navigation. His work consists of the history of means tried, up to the present time, to direct balloons; and of a plan for an aerial ship. The details into which the author entered left him no time to finish the reading of his memoir, which was referred to the examination of MM. Piobert and Séguier.

M. Longchamp read a memoir on the composition of phosphoric acid and of the phosphates, in which he proposed for the first of these bodies the formula  $P O_2$ , in lieu of  $P^2 O_5$ .

M. Babinet read a note on the variation in the height of the two neutral points.

It has been determined by M. Arago, and agreed on all hands, that the cloudless atmosphere illumined by the sun and shortly after his rising presents a point where there is no polarisation; this point is about  $30^\circ$  above the point of the horizon opposite to the sun, and is due to the influence of light reflected from the different illumined parts of the atmosphere. M. Babinet discovered a second neutral point, which is placed above the sun, when he is near the horizon, and very nearly the same height as the neutral point of Arago.\*

\* Sir D. Brewster has discovered a third; also secondary neutral points (see *Lit. Gaz.*, No. 1329, p. 480); where, however, little more than the mere facts were opportunity to enter into details, and the more especially as they will be in connexion with M. Babinet's note.

Sir D. Brewster has, by a series of observations very difficult to make, owing to the overpowering light of the

The existence of this second neutral point has been verified by several naturalists, and especially by M. Forbes. M. Babinet had intended to have observed, during the eclipse on the 8th of this month, whether the unequal illumination of the atmosphere during partial occultation would have moved the neutral point of Arago out of the vertical, opposed to the sun when he had risen a little above the horizon; but the unfavourable state of the heavens prevented him fulfilling his intent. In preparing for this observation, however, on the evening of the 3d, the atmosphere being extremely clear, M. Babinet noticed, that after the setting of the sun, the neutral point opposed to that luminary rose considerably, whilst the neutral point above the sun fell sensibly, but much less than the other mounted; thus exhibiting a displacement unequal and in an inverse ratio of the two neutral points.

M. Bourguery lectured on the result of his researches on the intimate structure of the lungs of man and of mammals.

The theory of M. Bourguery resembles that of Malpighi and Helvetius in regard to the air-capillaries communicating every where with each other. It differs from it in this, that the capillaries are canals, and not vesicles. This latter view approaches the similar one in the theory of Willis and of Reissessen; but it separates itself essentially as to the form, number, intricacy, and destination of these canals: the pulmonary functional tissue, according to the old theory, succeeds those of the bronchial vessels, radiating from a centre to the periphery, without any anastomosis among them, and terminating in *culs de sac*: according to M. Bourguery, the functional part of the organ constitutes a peculiar apparatus of sinuous canals, perpetually anastomosing—a single one with several, and of which those that come under the pleura, instead of forming *culs de sac*, bend inwardly, in order to go in again to the small lobe, and come together into a canal more deeply situated.

sun, discovered a third neutral point about  $10^\circ$  or  $12^\circ$  below the sun when at a mean altitude, receding from the sun when he was nearer the horizon, and approaching to his disc at higher altitudes. He states also, that an analogous neutral point would be seen below the anti-solar point; but that it could not be seen, as the sun's light reflected from the atmosphere became too feeble, before the neutral point in question rose above the horizon. Sir David has also discovered secondary neutral points, which accompanied the primary ones when near the horizon. This interesting phenomenon is best seen when the most distinct neutral point, viz. that of M. Arago, rises above the horizon before sunset, and when the horizon is bounded by the sea. The negative polarisation below the primary neutral point is counteracted by a cause near the horizon producing positive polarisation, and at the horizon itself positive polarisation exists. The arch of negative polarisation between the primary and secondary neutral points is sometimes  $8^\circ$  or  $10^\circ$ . By means of the polariscope alone the position of the neutral points, both primary and secondary, were observed; and the degree of polarisation was ascertained by compensating it, or destroying it by the opposite action of a bundle of glass plates, or by one or more reflections from black glass, the compensation being indicated by a neutral line where the polarised bands are interrupted and pass into the complementary bands. The compensating polarisation is varied by varying the angle of incidence, or the number of the plates, or the angle which the plane of incidence on the plates forms with the plane of polarisation of the part of the atmosphere observed. Sir D. Brewster prefers the Tourmaline to a Nicol's prism for the analysing part of the polariscope. Whenever the polarisation of the atmosphere was very weak in fine clear weather, it was always owing to the presence of a white nebulous matter, which was visible only in its effect, viz. by diminishing or diluting the blue colour of the sky. The polarisation was always, *ceteris paribus*, a maximum about  $85^\circ$  or  $90^\circ$  from the sun, and in a plane passing through the zenith; the polarisation being least in the horizon, unless in those cases where the nebulous matter was collected at higher altitudes.—*Ed. Lit. Gaz.*

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M. Rameaux presented a memoir on the *temperatures of vegetables*.

M. Damiani wrote that he had discovered a stalagmite of 30 metres long and 12 metres broad, at 2,8 myriamètres from Ajaccio; it belongs to the oriental alabaster, and has direction from north to south.

M. B. Dellessert transmitted a note from M. Delie, stating, that at Montpellier the weather was magnificent on the 8th of July, and the eclipse was observed there: for two minutes they could look at the eclipsed luminary with the naked eye without inconvenience; then the disc of the moon was surrounded with luminous rays, similar to the fiery train of a comet: the stars were visible.

## LITERARY AND LEARNED.

### ROMAN INSCRIPTION,

*Discovered at Battle Bridge, New Road.*

A ROMAN inscription has within these few days past been discovered at *Battle Bridge*, otherwise, by an absurd change of denomination, known as *King's Cross*, New Road, St. Pancras. This discovery appears fully to justify the conjectures of Stukeley and other antiquaries, that the great battle between the Britons under Boadicea, and the Romans under Suetonius Paulinus, took place at this spot. Faithful tradition, in the absence of all decisive evidence, still pointed to the place by the appellation *Battle Bridge*.

The inscription, which, in parts, is much obliterated, bears distinctly the letters LEG. XX. The writer of this notice has not yet had an opportunity personally to examine it, but speaks from the information of an antiquarian friend.

The twentieth legion, it is well known, was one of the four which came into Britain in the reign of Claudius, and contributed to its subjugation. The vexillation of this legion was in the army of Suetonius Paulinus when he made that victorious stand in a fortified pass, with a forest in his rear, against the insurgent Britons. The position is sketched by Tacitus; and antiquaries well know that on the high ground above *Battle Bridge* there are vestiges of Roman works, and that the tract of land to the north was formerly a forest. The veracity of the following passage of the historian is therefore fully confirmed:—"Diligite locum artis faucibus, et a tergo silva clausum; satis cognito, nihil hostium nisi in fronte, et aptant planitiem esse, sine metu insidiarum." He further tells us that the force of Suetonius was composed of "quartadecima legio, cum vexillariis vicinariis et e proximis auxiliariis." Tacit. *Annal.* lib. xiv. So that, almost to the letter, the place of this memorable engagement seems, by the discovery of the above inscription, to be ascertained. A. J. K.

## FINE ARTS.

### ROYAL ACADEMY.

THE Exhibition closes to-day; and has been, we learn, a very productive one. On Monday the members of the Academy inspect the works of art, in order to form their opinion of the candidates for the rank of Associates, who are now about to be elected. There is also an Academician's place vacant by the death of Sir David Wilkie.

No. 218. *Portrait of Sir R. Stopford.* F. R. Say.—Is very creditable to the artist's taste and talent.

No. 219. *Passing the Lock, Windsor.* W. F. Witherington, R.A.—A pleasing fac-simile of the scene, rather deficient in perspective.

No. 223. *Cottage in Suffolk.* C. Ward.—A pretty little bit of natural landscape.

No. 236. *A Soirée at St. Cloud.* F. Danby, A.—A glow of sunset over a formal but lively scene. The atmosphere is finely painted, and the figures gaily dressed and grouped.

No. 237. *Queen Elizabeth delivering the young Duke of York to the Archbishop of York, &c., at the Sanctuary, Westminster.* E. M. Ward.—A historical fact from Baker's Chronicle, fairly treated. The churchmen are in high pontificalibus; and the mother and child painted with feeling.

No. 256. *Mary Queen of Scots, when an Infant, stripped by order of Mary of Guise, her Mother, to convince Sadler, the English Ambassador, that she was not a decrepit Child.* B. R. Haydon.—There is no disguise in obeying the orders of Mary of Guise in this curious subject, which is treated in an extraordinary manner, amid a flush of forms and colouring, which is all but startling. The naked child is fat and stout enough for a female infant Hercules; and, indeed, all the rest of the characters are of the heroic cast. In 404, however,—*Edward the Black Prince thanking Lord James Audley for his gallantry in the Battle of Poitiers*,—there is much more of Mr. Haydon's poetical fervour and fine painting. There are many parts of the picture equal to any thing he has done; and the whole is gallantly composed and striking in effect. Whatever the faults in either, they belong to a high style of art.

No. 268. *The Reverie of Alnaschar.* T. Brigstock.—Is an amusing figure, cleverly drawn, and in good expression.

No. 279. *The Money-Lender.* R. M'Innes.—Also deserves a passing tribute of praise as a clever composition, and the story well told.

No. 292. *The River Dee, &c.* W. Havell.—A landscape like a man; but of considerable merit, and conveying a perfect idea of the country about Llangollen, watered by the Dee.

No. 298. *Portrait of F. Teynam, Esq.* G. P. Green.—A promising work by a young artist, the likeness good, and the position easy and well chosen. At the height it is hung, there is a spottiness about the coat which we cannot make out.

No. 299. *Portrait of Rear-Admiral Sir A. Farquhar.* 386. *Colonel Gurwood.*—Two of several very good portraits by A. Morton, whose station in this year's gallery must be one of great satisfaction to him and his friends. His *Penshurst* (1227), with portraits, is an interesting production.

No. 314. *A Pause! Two Portraits.* E. U. Eddis.—A very pleasing painting of two graceful girls; one reading, who has just made the pause. The subject is treated in a new and pleasing style.

No. 328. *An intercepted Raid.* T. S. Cooper.—A wild animal *mêlée*, full of action and spirit. The name of Cooper is not dishonoured by the force and skill with which the most prominent of them are portrayed.

No. 334. *Study of a Head.* R. W. Buss.—Of great merit, though on a small scale.

No. 345. *Portrait of the Duke of Buccleuch.* J. Watson Gordon, A.—His grace is on horseback, by the modern and living Raeburn of Scotland. The duke is taking off his hat; and the foreshortening is artistical, and not without a memory of Vandyck. The likeness also is good, without flattery; and we could merely have desired more freshness of colour to complete a clever equestrian group.

No. 346, 349. *Portraits of the Princess Augusta of Cambridge, and H.R.H. the Duke of Cambridge.* Two striking likenesses. By —

Heuss.—They are not painted in the English school of portraiture, but have an air of foreign art. They are agreeable.

No. 375. *The Holy Family reposing during the Flight to Egypt.* F. Danby, A.—Dark but grand over nearly all the canvass. The day-break on the upper corner scarcely disturbs the solemnity of the composition.

No. 378. *The Presentation of a Penitent in St. Peter's, Rome, &c.* E. V. Ripplingille.—Of a classic character, and wanting in variety and expression. Not so.

No. 379. *Il Foto.* P. Williams.—An animated and affecting piece, in which a convalescent, a charming girl, accompanied by her friends, completes a vowed pilgrimage to the shrine of her patron saint. All the sentiments of gratitude, religion, and reverence, are sweetly and naturally depicted; and the whole subject is of a pleasing character.

No. 380. *Portrait of Mrs. Warburton.* B. R. Faulkner.—A beautiful object, painted as such objects ought to be.

No. 387. *A Scene at Aberystwith, &c.* W. Collins, R.A.—One of Mr. Collins' sweet sunny sea-sides, enlivened by a group of three fine children of E. Antrobus, Esq., whose young and playful appearance well befit the scene.

No. 395. *Flight into Egypt.* J. Martin.—Replete with mountain magnificence and sublimity—the sacred poetry of Martin's pencil.

No. 402-3. *Two Daughters of Lord Caudor, and the Daughters of the Count de Flohault.* Mrs. J. Robertson.—Small but highly-finished portrait groups. They are touched with a polished hand, and resemble whole-length miniatures of an enlarged size. The costumes are perfect.

No. 420. *The Crusader's Departure.* N. J. Crowley.—A lovely damsel, whose attitude and sorrow are readily interpreted by the waving pennons seen in the background.

No. 426. *Nonpareil—440. Adonis: favourite horses of George IV. and George III.* J. Ward, R.A.—Warranted without a blemish.

No. 436. *Death of Sir W. Lambton at Marston Moor.* R. Ansell.—Extravagant horse.

No. 437. *The Innocent are gay.* W. Etty, R.A.—A tasteful group of children dancing round a female figure. The flesh-tints are more shadowy than is usual from his brilliant easel; but the disposition of the innocent and gay is truly happy.

No. 449. *Portrait of Lady Baring.* J. Linnell.—Exceedingly well executed. 467. *Portrait of the Right Hon. F. Baring;* and 551. *Sir T. Baring,* by the same, are yet more excellent performances.

No. 454. *A Scene from the Vicar of Wakefield.* W. P. Frith.—Nicely fancied and fancifully painted. The countenances of the vicar's daughters remind us of Hogarth for piquancy, beauty, and colour.

No. 455. *A Highland Reel.* W. Kidd.—A Highland reel is grotesque enough; but our artist, generally so characteristic and national, has made it distorted.

No. 458. *The Trial of Charles I., &c.* W. Fisk.—With much of merit, there is a want of unison in this picture. The astonishment and alarm must have been universal; whereas there are many parts in repose, and others as if simply inquiring what was going on. Fifty or sixty portraits, collected from the most authentic private sources, give much value to the work; and it is altogether a plume in the artist's cap.

No. 479. *Portrait of Lieut.-General Sir John Macdonald.* R. S. Lauder.—A speaking and soldierly likeness. The gallant adjutant-general seems what he truly is—of a noble bearing and



countenance—the mind to plan, the arm to perform, and the promptitude to command.

No. 485. *The Covenanter's Marriage*. A. Johnston.—Represents a ceremony in the days of persecution with great truth and effect. It is peculiarly Scottish, and illustrates the habits of the Covenanters and the circumstances of the period in a striking manner.

No. 491. *Alfred dividing his last Loaf with the Pilgrim*. W. Simson.—The female head is beautiful; but we cannot admire the general tone or character of the picture, which is straggling and inexpressive.

No. 497, 499. *Portraits of Ladies*. Miss E. Schmack.—It is always a pleasure to acknowledge female talent; and these are very clever examples of it. The dress of the first is handled with the utmost delicacy, and we doubt not the likenesses are good.

No. 507. *A Subject from Goldsmith*. C. W. Cope.—In which the artist has departed wide away from the couplet he has quoted. Age is not talking, and the lovers are not whispering.

No. 547. *Taking up Eel-Pots*. J. Stark.—Not hung so low as we could wish, but evidently a sweet sylvan scene.

No. 548. *Cromwell discovering his Chaplain, Jeremiah White, making love to his daughter Frances*. A. Egg.—This Jeremias is vulgarly painted—Cromwell looks like a stumpy butcher.

No. 549. *Deer-Stalking*. T. Duncan.—This, on the contrary, is rather too dandified for the rough Highland sport. Campbell of Monzie, and Major Markham, appear to have been painted in their best shooting-dresses in the drawing-room, and not in the mountains after the arduous chase and bringing down of the antlered deer. In other respects the painting is extremely spirited.

No. 550. *An old Water-Mill*. J. Wilson, jun.—A very sweet piece of nature.

On bidding adieu to the third or West Room, we have to observe, that at the ceiling and on the floor are many performances of many kinds, which are out of the reach of criticism.

Of the drawings and miniatures, from No. 557 to 998, we have to state that they are not inferior to the exhibitions of past years, and fully sustain the reputation of the various artists, who shine in fruit and flowers, fancy-subjects, miniatures, enamels, &c. &c. H. P. Bone, S. Lover, W. Bone, W. Essex, Miss F. Corbush, J. Hayter, A. H. Taylor, F. Tatham, W. Patten, G. Jones, R.A., A. E. Chalon, R.A., F. Roehard, A. Robertson, Sir W. J. Newton, W. C. Ross, are among the most prominent contributors.

In the Architectural Room (989 to 1201) are a number of excellent designs, but, as hitherto, much injured by the intermixture of oil paintings. Surely one apartment might be set aside for so important a branch of art. Palaces and prisons, churches and almshouses, piers and villas, &c., were enough of themselves for an exhibition. Mr. Barry's *View of St. Stephen's Hall in the new Houses of Parliament*, exhibiting the effect of decorating the walls of the gallery with paintings, attracted particular notice; and we were struck with several designs for churches, which displayed taste and originality. See 1055, 1067, 1154, by Wyatt and Brandon, E. C. Hakewill, and J. Hanson. Some fine medals of W. Wyon, R.A. also claimed our attention and admiration.

In the Octagon Room (1202 to 1266), either the bad company corrupted the good manners, or the light was too unfavourable to what merit was deposited there, for we could detect little or nothing to speak of as deserving of particular applause. The productions of W. Linton, R.A.

and Fanny Maclean, E. Havell, T. F. Marshall, Miss E. Schmack, &c., ought not, however, to be passed over in silence.

The sculpture this year, notwithstanding the loss of Chantrey, by whom there is only one posthumous statue\* (No. 1304, Sir C. Forbes, for the native merchants of Bombay, to whom the worthy baronet is endeared by a thousand services and benefits),—was far from deficient in interest. No. 1267, a fair bust of the Queen, by J. Francis. No. 1268, *Prince Albert*, R. W. Sievier, a very pleasing head, the hair somewhat Germanised after the Bursen fashion, but the resemblance altogether gentlemanly, thoughtful, and intelligent. *The King of Prussia*, and *Sir W. Home*, by the same, possess much character.

No. 1269. *Monumental Group, for Bishop Corrie at Madras*. H. Weekes.—The bishop has a Hindoo youth in hand; but there is no novelty or invention in the design, which is therefore only moderately successful.

No. 1273. E. H. Bailly's *Model of the Lord Nelson for the top of the pillar in Trafalgar Square*.—Although this figure is to be 18 feet high, it will be so little seen that we need not care much for its having been well modelled by so distinguished an artist as Bailly.

No. 1274. *Sketch for Eve, the Bride*. J. Bell. 1278. *The Babes in the Wood*. The same.—Two graceful and feeling works, but we are not sure if by the same hand. The first is the finest both in design and execution.

No. 1279, *Marble Statue of Andromeda*, L. Macdonald, is well worthy of his fame. The figure is full and feminine, combining softness and elasticity with form and position. *The Bacchante*, 1293, is not so much to our taste, being more thin, and wanting the exuberance generally attached to the mythological character of a votress of the rosy god. 1294. *Hyacinthus*, by the same, is another honour to his conception; and his busts, 1364. *Mrs. Eyre*, 1376. *Lady Baker*, and 1388. *Lord Canning*, are all equally to the credit of his skill and fidelity.

1280. *The Falconer*; for J. C. Bulteel, Esq., Flete, Devon. C. R. Smith.—An appropriate modern subject, and modelled with judgment. 1281. *Group of the Graces*. J. Loft.—Not the Graces.

1282. *Statue of M. T. Sadler, Esq.*, for Leeds. P. Park.—A sad failure in every respect.

1286. *Eve and First-born*. W. C. Marshall.—Disagreeably natural and ill-combined. The next No., *Venus rescuing Diomed*, &c., shews that the sculptor can and will do better things.

1290. *Unfinished Figure in Marble of a Girl trapping a Bird*. J. E. Carew.—Here nature is all charming; and it is long since we have seen a design of modern character so full of simplicity and beauty.

1295. *Prayer*. 1297. *Cupid*. P. M'Dowell, A.—Two delightful performances in their class; the elegant rather than the lofty in art.

1299. *A monumental Angel, part of a Group*, &c. R. Westmacott, A.—A finely conceived figure—angelic, and yet humanly touching. If the entire group be finished in a similar style, it will indeed be a splendid work. 1406 and 8. *Busts of Lady H. Baring, Wilbraham Egerton, and Miss Egerton (of Tatton)*, shew great talent in this humbler line.

1310. *Model of the Piece of Plate presented to the Duke of Buckingham by the Agriculturists of the Shire*. E. G. Papworth.—An elaborate and able production, in which almost every emblem of agricultural industry is happily arranged. A handsome and apposite composition, and worthy

\* There is also a bust of Mr. Morrison, M.P., No. 1409.

to be an heirloom in the noble family of Chandos.

1320. *Marble Bust of J. Thompson, Esq.* 1322. *Of Sir M. W. Ridley, Bart.* 1360. *Of D. Blaine, Esq.* J. G. Lough.—Three busts are all we have of this great genius in the present exhibition. They are, as far as such matters can be, worthy of his chisel. But is it not a national shame that the author of *Milo*, of *David*, and of other works of the highest elevation in the art, should have only bust-making for his studio to set before the public? Lough, our Thorwaldsen, who has produced the noblest specimens of the lofty and imaginative that have ever adorned the British School, was defeated in the competition for the Nelson Monument by a piece of masonry, and had but one vote (the scrutineers have since reported none) for the Wilkie Memorial. What a commentary upon the state of the art of sculpture in England, its patronage, and its appreciation!

1346. *Lady Godiva*. A sketch. W. Behnes.—A charming sketch too, all modesty and grace. The female form is too sweetly moulded to admit of the tressy cloud of the old legend; and it is only improved by its departure from that Coventry mystery. Mr. Behnes has also some excellent busts—the living likenesses of Sir W. Molesworth, T. Poynder, Alderman Lucas, and others.

P. Hollins has good busts of the Rev. S. Warnford, LL.D., for the Birmingham School of Surgery, and of Mr. St. John Mathews; and there are some more favourable examples, including one very like Allan Cunningham, by H. Weekes, as well as portraits and groups of animals by Messrs. McCarthys;—but, like the Exhibition itself, our critique must now wind up and close. So we bid all our artists farewell, with the wish they may all have more to do, and do better, another year.

*Meeting of the Committee for promoting the Opening of Public Places to the People.*

At the meeting on Wednesday week, the report, after noticing the loss of several valuable members, especially the late Dr. Birkbeck, and Sir G. Sinclair's retirement into the country, and the accession of other gentlemen, who had given proofs of zeal and efficiency in the cause,—proceeded to enumerate the various improvements in institutions, viz.:

*Hampton Court*.—As recommended by the society, and by the late select committee on national monuments, numbers have been put to the pictures, the Prince's rooms have been added to the free exhibition, and the Catalogue considerably improved. The number of visitors continues to increase.

*British Museum*.—A synopsis, in a cheaper form, has been ordered by the trustees. Number of visitors: from Jan. 1st to June 30, 1842, 232,778, without a single instance of misbehaviour being complained of.

*National Gallery*.—Has at length, after repeated remonstrance from the chairman of committee (Mr. Hume), been satisfactorily improved. Number of visitors: in 1841, 538,355, and from 1st January to 7th July inst. 370,105; their conduct as praiseworthy as on former occasions. The reduction of Catalogue from 1s. to 4d. was not forgotten.

*Tower*.—From 1st May to 30th October, 1841 (the night of the fire), 72,599 persons (being an increase of 12,617 on the corresponding period of preceding year); but, probably from an erroneous idea among the people that the most valuable objects were destroyed by the flames, a great decrease has been experienced

since, only 22,381 having visited the armories from 31st Oct. to 30th April, 1842.

The accounts from Newcastle-on-Tyne, from Liverpool, and other towns, very satisfactory.

The admission of the public to the Painted Hall, with its naval gallery, and the Chapel at Greenwich, by Sir R. Stopford, in answer to the application of the chairman, gave great satisfaction,—as it is conceived that every British subject must be anxious to contemplate the portraits of native heroes and the representation of noble daring; and, it may be supposed, on the other hand, that a nation's applause is the proper reward of true greatness alike for the performer of great actions and for the genius that depicts them.

The extension of knowledge by cheap and improved Catalogues was noticed; and samples, at a penny each, for the National Gallery, Greenwich, Dulwich, the Soane Museum, Barry's pictures at the Society of Arts; and others, in an elegant form, for Westminster Abbey, Hampton Court, the National Gallery, &c., lay on the table.

The whole results elicited the general approbation of the members present; among whom we noticed Lord Colborne, Mr. Hume, M.P., W. Ewart, Esq., M.P., R. M. Milnes, Esq., M.P., H. T. Hope, Esq., J. Angerstein, Esq., Messrs. Britton, Donaldson, Auldjo, Wilks, Inman, Godwin, &c.

#### NEW PUBLICATION.

*The Trial of Thomas Earl Stafford, in Westminster Hall. Painted by William Fisk, Esq.; engraved by James Scott. London: Thomas Boys.*

This is a very highly finished and beautiful mezzotint, and will form an admirable companion to the Trial of Lord William Russell, one of the most popular productions of art of the present times. In Westminster Hall are assembled the judicial sacrificers of this accomplished and unfortunate nobleman; and many of his own family are present, as well as his royal master, who could not avert his fate, the prototype of his own. There are no fewer than fifty-two portraits in this interesting and masterly composition; and the various parties,—the friends, the accusers, and the judges,—are grouped with great feeling and spirit. The costume of the period is favourable to the arts; but the expression of the principal characters, Stafford, his lady, Sir George and Lady Wentworth, &c. &c., are by far the higher merits of the picture. We have only to repeat that it is engraved in the best possible style; and, as a work for the general public, does infinite credit to Mr. Boys's enterprise and taste.

#### VARIETIES.

*A Manual of Dignities, Privilege, and Precedence.* By C. R. Dodd. (Whittaker and Co.)

—We received this most useful volume too late for notice among our reviews; but as the season immediately applicable to it, for the present, is passing away, we take this opportunity to point the public attention to its merits. To Mr. Dodd we are indebted for very valuable parliamentary and other guides, but in none has he rendered greater service in the way of reference than by the production before us. The list of great public functionaries from the Revolution to the present time is a curious document; but the whole is full of heraldic, family, and historical intelligence, ceremonies, &c. &c., not merely convenient to be consulted, but reading of general interest and instruction.

*Buonaparte.*—We have referred by a note in our review of *Alison's History* to the following fact, which we received in Paris at the time from a distinguished diplomatist, now a British peer, who was at the head-quarters of one of the allied armies. When Napoleon marched for the Rhine, his force, on a fine summer morning, with the light breaking upon it, had to pursue a route along a range of heights, which exposed it to be counted, almost to a file, by his enemies. It was then, for the first time, they ascertained how comparatively small was the band with which such a series of daring exploits had been performed; and they took their measures accordingly.

*College of Civil Engineers.*—The annual distribution of prizes took place at the College at Putney, on Wednesday; the Duke of Buccleuch, president, in the chair. The Earl of Devon read the address of the council, which spoke of great difficulties during the past season, now happily overcome, and of more cheering prospects. The president then gave the prizes as awarded, to the best proficient in natural philosophy, mechanics, chemistry, geology, mathematics, &c.; and after the expression of his satisfaction by H.R.H. the Duke of Cambridge, the proceedings terminated.

*Photography.*—Recently her Majesty the Queen Dowager and other distinguished personages, the Prince George of Cambridge, the Duke and Duchess of Northumberland, &c., have had their portraits taken by the photographic process at the Adelaide Gallery. The first visit of the Queen Dowager, on the Saturday afternoon, was unannounced; and her incognito was only discovered by M. Claudet's assistant, who pronounced the likeness developed by the mercury to be that of the Queen Adelaide. Although thus striking, the daguerrotype, owing to the decline of the sun, was not considered sufficiently perfect; and the honour of a morning visit was respectfully requested. Before eleven o'clock on Monday, the request was complied with, when her Majesty and several of her suite were most successfully daguerrotyped; and they expressed themselves highly pleased. Her Majesty's manner was most affable and courteous.

*Mathew's Villa.*—Among the sad changes of property, we see Mathew's favourite villa at Highgate Hill (where we have enjoyed many a pleasant day) announced for sale under the hammer of Mr. G. Robins. It is long, however, since it was inhabited by our inimitable imitator.

*The Sale at Shugborough Hall,* advertised in another page, is attracting vast attention; and many persons of rank and influence are visiting the splendid collection of pictures which adorn that noble mansion, and among them a number of the most glorious productions of ancient masters. This sight alone is indeed well worth the run from London.

*Tabessa.*—The *Morning Post* of Tuesday contains a most interesting account of Tabessa, a city recently visited by the French forces in Africa, and occupying the site of the Roman Thevesta. The ruins are of great extent, and the inscriptions numerous and valuable. About 12 or 1500 Arabs now inhabit the place which contained from 30 to 40,000 Romans.

#### LITERARY NOVELTIES.

The fifth volume of Miss Agnes Strickland's "Lives of the Queens of England" has passed through the press, and the rest of the work is growing to a conclusion. It will, we hear, be succeeded by a series of "Lives of the Queens of France" on a similar plan, embracing the manners, customs, and domestic history of that country. The researches of Miss Agnes Strick-

land and her sister into documents and chronicles connected with French history for the purpose of illustrating their present work, has led them to make rich collections relative to France. As that country has been more frequently governed by female regents than England by queen regnants; and as the royal families of both realms have been at various times intimately connected with each other, there is reason to suppose that such a production will reflect curious lights on our national history, as well as on that of female royalty.

#### LIST OF NEW BOOKS.

The Seasons, by James Thomson, with about 88 Illustrations, and with the Life of the Author, by P. Murdoch, D.D., F.R.S., edited by Bolton Corney, Esq., 8vo, 21s. cloth.—English; or, the Art of Composition explained, in a Series of Instructions and Examples, by G. F. Graham, 12mo, 7s.—Stonehenge; or, the Romans in Britain, 3 vols. post 8vo, 11s. 6d.—Lessons on the Gables, by T. H. Howe, 12mo, 7s.—Cardinal Allen's Admonition to the Nobility and People, A.D. 1588, 12mo, 6s.—The Bible, with Notes and Reflections, by D. Davidson, with Index, &c., fol. 37s.—The Shooter's Hand-Book; a Treatise on Sporting, post 8vo, 6s.—Scriptural Instruction for the Least and Lowest, Part 3, 18mo, 4s.—Practical Treatise on the Diseases of the Scalp, by J. E. Erichsen, 8vo, 10s. 6d.—C. H. R. Harrison on Deformities of the Spine and Chest, 8vo, 8s.—Grammar Lessons, by a Lady, designed as a Supplement to Mary's Grammar, 18mo, 2s. 6d.—A Steam-Voyage to Constantinople, by the Marquis of Londonderry, 2 vols. 8vo, 28s.—Popular Objections to the Study of the Prophetic Scriptures considered, by G. Ogilvy, Esq., 12mo, 4s.—The United Church of England and Ireland Catholic, by the Rev. S. C. Foot, 8vo, 2s. 6d.—Tables of Simple Interest, from 2½ to 5 per cent, by James Laurie, 7th ed., 8vo, 21s.—Tables of Simple Interest, from 5 to 9 per cent, by James Laurie, 8vo, 7s.—The Cottage on the Common; and the Little Gleaner, by C. M., square, 2s.—Picturesque Excursions, with 400 Views at and near Places of Popular Resort, edited by A. Freeling, fcp. 5s. 6d.

#### METEOROLOGICAL JOURNAL, 1842.

July.	Thermometer.	Barometer.
Thursday . . . 14	From 47 to 72	30.25 . . 30.33
Friday . . . 15	" 46 " 72	30.38 " 30.25
Saturday . . . 16	" 47 " 68	30.18 " 30.02
Sunday . . . 17	" 52 " 69	29.93 " 29.81
Monday . . . 18	" 54 " 73	29.80 " 29.84
Tuesday . . . 19	" 57 " 71	29.85 " 29.77
Wednesday . . 20	" 52 " 67	29.72 " 29.69

Wind S. and S.W. on the 14th, 18th, and 20th, otherwise N. and N.E., overcast with rain at times, 18th, 19th, and 20th; otherwise generally clear. Rain fallen, .09 of an inch.

CHARLES HENRY ADAMS,  
Latitude, 51° 57' 32" north.  
Longitude, 3 51 west of Greenwich.

#### TO CORRESPONDENTS.

By means of another extra half-sheet this week, we have brought the Report of the British Association to the close of Monday, leaving only the proceedings of one day, Tuesday, and Wednesday's conclusion, for our ensuing No.; so that our Monthly Part for July will contain the whole and complete account of these transactions, so interesting to the scientific world, in physics, chemistry, natural history, geology, and embracing questions and affording new lights in agriculture, commerce, manufactures, statistics, and mechanics, of paramount importance to our own country and to the general welfare of mankind. We have to repeat, that in the conversations and discussions which ensued in the various Sections (and to which we have paid every attention in our power) more intelligence of immediate practical value was elicited than even in the annual Reports which mark the progress of the Sciences. There are, however, two or three papers of so much consequence, that we may hereafter devote separate articles to their development and review.

At the present moment, when the French and Belgian commercial treaty excites so much interest, we may point the attention of our readers, especially those engaged in manufacturing and mercantile pursuits, to the statement of Mr. Porter respecting linen-yarn exports in the Statistical Section of the British Association: see p. 521.

We are forced again to postpone Mr. Bain's letter, owing to the pressure of more temporary matter.

We do not know that aught we can say would compose the differences respecting the copyright (if there be any copyright) of the *Stabat Mater*.

C. Eleanor Wilson's prospectus of Casts, to be taken from Autographs cut by prisoners in the Tower, promises an interesting work; but the price seems (necessarily?) very high. Were many of these sad abodes carefully cleaned and restored, we believe a great number of such records would be added to those which are now visible.

## ADVERTISEMENTS.

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some of modern date, may be pronounced one of the richest in this  
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any language offered in their praise would be far too feeble to express  
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the sale, and catalogue then had, at 5s. each, on the Premises; at  
Messrs. Keen and Hand's, Solicitors, and at the Stafford Arms, Staf-  
ford; the Advertiser Office, Birmingham; the Chronicle Office, Chel-  
tenham; Royal Hotel, Manchester; Waterloo Hotel, Liverpool; of  
Edward White, Esq., Solicitor, Great Marlborough Street; of  
Messrs. Vizard and Leman, Lincoln's Inn Fields; at the Auction  
Mart; and at Mr. George Robins's Offices, Covent Garden.

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## MISCELLANEOUS.

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